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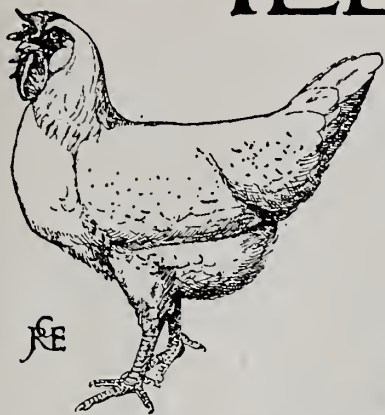


PACKING DANISH EGGS FOR ENGLISH MARKETS.

The women on the right are sorting and grading the eggs, while the woman on the left is weighing the eggs as they are received from the various depots.

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THE ILLUSTRATED POULTRY RECORD



VOL. IV.—No. 8.

May 1, 1912.

Monthly Sixpence Net.

DIARY OF THE MONTH.

EDITORIAL NOTICES.

Telegrams: "VIVACIDAD." Telephone: CITY, 2083.
ENTERED AT STATIONERS' HALL.

The Editor will be glad to consider any MSS., photographs, or sketches submitted to him, but they should be accompanied by stamped addressed envelopes for return if unsuitable. In case of loss or injury he cannot hold himself responsible for MSS., photographs, or sketches, and publication in the ILLUSTRATED POULTRY RECORD can alone be taken as evidence of acceptance. The name and address of the owner should be placed on the back of all pictures and MSS. All rights of reproduction and translation are reserved.

The Editor will be glad to hear from readers on any Poultry Topics, and all Queries addressed to the paper will be answered by experts in the several departments. The desire is to help those who are in difficulty regarding the management of their poultry, and accordingly no charge for answering such queries is made.

The Annual subscription to the ILLUSTRATED POULTRY RECORD at home and abroad is 8s., including postage, except to Canada, in which case it is 7s. Cheques and P.O.O.'s should be made payable to the ILLUSTRATED POULTRY RECORD.

The ILLUSTRATED POULTRY RECORD is published on the first of every month. Should readers experience any difficulty in securing their copies promptly they are requested to communicate immediately with the Editor. The latest date for receiving advertisements is the 20th of the month preceding date of issue.

The utmost care is exercised to exclude all advertisements of a doubtful character. If any reader has substantial grounds for complaint against an advertiser he is requested to communicate at once with the Editor.

The International Poultry Association.

The arrangements for the meetings of the Provisional Committee of the International Association of Poultry Instructors and Investigators, to be held in London next July, are progressing, and we understand several further names of delegates have been received additional to those announced in our columns last month, so that up to the present something like twenty countries will be represented. The programme is not yet completed, but from a draft we learn that at the opening meeting to be held on Thursday, July 18, an address of welcome will be given by the Right Hon. Lord Lucas, President of the Board of Agriculture and Fisheries; that Session will be open, by invitation, to the public, and after the formal proceedings Mr. Edward Brown, F.L.S., will deliver his presidential address. On the day following the topic selected is "The History and Present Status of Poultry Instruction and Investigation," when it is expected that a report will be presented for each country represented on the Provisional Committee, which should give a comprehensive survey of the subject not hitherto available. Other topics to be discussed during the meetings are: "The Needs and Possibilities of a Permanent International Organisation of Poultry Teachers and Investigators" and "Organisation of Experimental Work." An important part of the deliberations will consist of adoption of rules and a scheme of operations for the Association. We regard this assemblage of workers from various countries as one of the most important gatherings in connection with the poultry industry.

A Disastrous Season.

It is of no use disguising the fact that the past few weeks have hit poultry-keepers all over the

country very hard indeed, and that the spring months of 1912 will be remembered as the most serious they have experienced for several years. Everything promised well. A high standard of national prosperity, abundant trade, good wages, and a favourable winter gave promise of a successful period. Then came the coal strike, to which we made some reference a month ago, with all its losses and miseries, which followed on the heels of an intense winter shortage of eggs, just when supplies became abundant, resulting in a huge falling-off in demand and a consequent rapid decline in prices, when good returns should have been realised. Whilst well-to-do people will have eggs when they want them, the spring sales are largely dependent upon our industrial population, and whatever reduces the purchasing power of the latter means that non-essential food products are first of all to be discarded. That has certainly been the case of late. The great pyramids of cased eggs, both home and foreign, for which purchasers could not be found, except at very heavy sacrifice, are an indication of dislocation of trade, which is a heavy blow to all concerned. Nor is this loss restricted to those engaged in food production, for breeders are finding a lessened demand for eggs and chickens. It is probable also that the spring demand for chickens has been affected, although to a lesser extent. That the nation and the poultry industry will regain the ground thus lost cannot be questioned, but it will take some time ere that is true. Meanwhile, it is wiser to face the position. Most serious is it for smaller producers who were just gaining their feet, and to whom the reduction of returns is a heavy loss.

Another Side to Poultry-Keeping.

Whilst the main efforts have been, and must continue to be, for development of the poultry industry as a branch of agriculture, for the reason that upon farmers we mainly depend for food supplies, there is another aspect to which sufficient attention has not been paid in many districts—namely, poultry as a supplemental pursuit for artisans. That has always been in evidence throughout Lancashire and Yorkshire, and to a lesser extent elsewhere. “Lancashire Tyke,” in the *Blackburn Weekly Telegraph*, says:

The production of eggs is an occupation peculiarly suited to the needs and abilities of the labouring classes. It yields its maximum profits in return for the individual attention which they alone can give it. No other industry can be started with so small a capital, and none offers a more generous reward in proportion to the amount invested. So wide is the scope for its extension that it would to-morrow provide remunerative employment for a hundred thousand men and women—if so many were qualified for

the work—and clear them out of the labour market.

He suggests that this might to some extent remove the causes of unrest now so apparent, but it is suggestive that some of the places where poultry-keeping is most general were very prominent during the recent cotton strike. That is, however, a secondary question. What has already been accomplished shows in other ways the value of this industry as supplemental to the ordinary avocation, giving a healthy and profitable pursuit, and providing for a part of the household requirements. What is most wanted is land. There the main difficulty lies. And land on fair and equitable terms. To charge £10 annual rent per acre for what is practically waste ground, as at Burnley, means that the opportunity for making a profit is very small. Given such land being available, there is no doubt whatever that there might be a great accession to the number of artisan poultry-keepers and an important addition to their incomes.

Table-Poultry in Scotland.

Up to the present comparatively little attention has been paid to table-poultry in Scotland, of which several sections of the country are specially suitable, equally by reason of the climatic and soil conditions. The old notion that the northern half of Britain is colder and bleaker than the south has long since been exploded. It may be perfectly true that the warmer seasons are not quite so early, but that is all. Scotland varies more than does England. There are some areas where, by excess of rain, we should strongly advise against anything but egg-production. The same, however, is true of England and Wales. We are glad, therefore, to see that one of our Scottish contemporaries has been advocating the conduct of careful experiments on an extensive scale in respect to the growing of chickens for market purposes, and hope that this question may be taken up on right lines, with due selection of the places where tests are to be carried out. The primary consideration is that the soil shall be dry and well drained, otherwise the results cannot prove satisfactory. If to that is added a mild, equable temperature the combination is essentially favourable. If anything is to be made of this branch of poultry-keeping there must be unity of action over fair-sized areas. Isolated and individual efforts will do very little. And a further point is that Scottish consumers require to be educated to a higher quality of table fowls.

“Cheap and Nasty.”

As long as competitive methods prevail will men be tempted by low prices. When we are all organised into communities upon Socialistic lines

it may be different, but that time is a long way off. Mr. Pettipher does well, therefore, in calling attention to the evils arising from the craze for low prices. Such instances as he mentions cannot be profitable to the breeders, who are to blame in that they often think or act as if it were true that every specimen produced is, or ought to be, good enough for stock purposes. Such is an erroneous view, and its influence has been very harmful indeed. Only the selected specimens should be used in this way, whether on the place of breeding or elsewhere. That is always the line of advancement. Low prices are frequently due to lack of judgment which and when to kill. Birds are retained in the hope that a better market will be found for them, when they ought to have been eaten long before. On the other hand, it may be suggested as to whether high-class breeders are not somewhat to blame. As a question of productiveness, it is found that the cheap, low-class fowl is equal on utility lines to the culls from fanciers' yards, for which higher prices are asked. The entire question raised is worth discussion.

"Enos Malpas."

The question which has been most frequently asked us, both verbally and by written communications, during the last two months, is, "Who is Enos Malpas?" Although we are bound by a definite promise not to reveal the identity of our contributor, who prefers to write without his personality coming into consideration, we are not surprised that many should desire to penetrate the veil of secrecy. So far as we are concerned, that cannot be. The writer himself and the Editor are alone, we believe, in possession of knowledge which many others would like to share. The interest thus manifested is a tribute to these "Personal Letters from an Old Fancier," who evidently knows what he is writing about, and has touched upon many questions which are of considerable importance, but which have only too long been ignored. All that we are able to state is that the designation is a true one, and that the author can claim it without question. The letter which we publish this month breaks into a fresh section of poultry-keeping, and will, we believe, be read with profit by many; whilst from what we know of the letters which are to follow, readers of the POULTRY RECORD may anticipate excellent reading, and, what is more, truths expressed in a forceful manner. Our correspondent has thus far driven his points home without fear, yet without malice.

Supplies from the Antipodes.

Attention has previously been called to the small supplies of eggs and poultry which reach the United Kingdom from Australia and New

Zealand, in spite of the fact that much is said in those Colonies as to producing for the British markets. An instructive article on this subject will appear next month by "Statistician." In 1911 we only received from the southern sections of the Empire 270 great hundreds of eggs, in value £130, and the value of poultry imported was £615, or £745 in all. Such is surprising in the extreme, but is due to a very rapid home demand and consumption, so that it is more profitable to sell on the spot. How long that will continue remains to be proved, but there is no immediate prospect of any notable extension of the trade. Naturally, the distance to be traversed is an important factor, as compared with, say, Canada, but against that is the seasonal advantage which Australia and New Zealand possess by reason of the fact that what is the scarce time north of the equator is the period of plenty to the south. That is not the case with North America, where the laying and chickens' seasons are identical with our own. It may be taken that September to December are when eggs and chickens can be most plentifully and cheaply produced at the Antipodes, corresponding to March to June with us. As the time of transportation does not take more than six weeks it will be seen how the full benefit of high prices, more especially in the case of eggs, is obtainable. Still, as each country should cater for its own needs first, until there is a much greater extension of poultry-keeping in the Colonies named, it is scarcely likely we shall see any marked increase in the volume of Antipodean supplies.

Nature's Way Best.

How much disease in human beings is caused by artificial methods of life has never been determined and probably never will be, but that it is very great all medical authorities admit. And the same is true with respect to animals and birds. What we have to discover is the minimum of non-natural treatment correlative with increased and profitable production. Such is the point towards which all should aim. It is not enough to cure disease when it appears. What we should aim for first and foremost is prevention. The former is an interesting etiological study, but the latter is that which concerns the practical man most of all. We are led to these remarks by an article on "Blackhead" in turkeys in an American contemporary, in which the writer, Mrs. Chas. Jones, who is a breeder, suggests that it is due to evil systems of feeding. This lady says:

Some years ago we heard nothing about this dreaded disease, blackhead, but there came a time when there arose a demand for heavy turkeys, and it was weight that sold the breeding stock. Everyone began to feed their little poults in order

to rush them along and acquire size, knowing that if they could raise the biggest, heaviest turkeys, the public would be willing to pay a big price for them. Then came this disease. . . . A solution of the difficulty is to go back to nature's way, and turn the mother turkeys into the fields as soon as the poults are strong enough to follow her. Only a turkey hen knows how to raise them.

The writer goes on to say that all required, in addition to what are obtained naturally, are plenty of bran, grit, and charcoal, which should certainly reduce the cost of feeding. We believe the disease referred to is due also to bad conditions, notably foul ground and exhaustion of natural

landed from China, a portion at least were unfit for food. Whatever the cause—whether, as suggested, due to a failure of the refrigeration plant on board ship or not—the question arises, How was it that they were passed by the authorities on landing, as it was then they should be stopped? We can understand that for supplies from France, or even America, the examination does not need to be at all strict, but in this case goods of a perishable nature had been brought half over the world, passing through dangerous zones, and yet such appear to have been landed without, at any rate, a sufficient examination. There is laxity somewhere, and it is time that this was stopped.



IDEAL SURROUNDINGS.

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elements; but that forcing reduces the vitality and makes the system more susceptible to disease is unquestionable.

Chinese Chickens.

What became of the large quantity of poultry imported last year, amounting in value to upwards of £48,000, we do not know, nor yet what condition they were in when consumed. But it is evident some recently sold were more than doubtful, for in a case tried in the Bristol County Court it was stated that out of a huge consignment

This is not a question of false designations, but of preventing the sale of birds unfit for food.

Canadian Shortage of Eggs.

With all her vast tracts of land and growing production, Canada has to import eggs to satisfy her needs. In 1910 upwards of half a million dozens of eggs were imported from China, Russia, and the United States, and it is stated that merchants have had to curtail their operations owing to an inability to secure the quantity and quality of eggs for which they have an outlet.

THE FUNCTION OF POULTRY EXHIBITIONS.

GERMAN METHODS COMPARED WITH BRITISH PRACTICE.

By EDWARD BROWN, F.L.S.



POULTRY Shows may be divided into three classes.

First, there are the great displays of fancy fowls, national in their character, drawn from the entire country and conducted frankly in the interests of fanciers, who maintain and support them, and have a perfect right to determine their character and scope. Occasionally in these we find a sporadic attempt to "throw a tub to the whale" by the provision of a few classes for table-poultry, or even by offering prizes for "the most likely layer," but these seldom awaken any interest. The fact remains that the overwhelming number of exhibits are judged upon fancy lines. No one has any reason to complain of such an arrangement. Certainly I have no desire to do so. Those who pay the piper have a right to call the tune. And I should be sorry indeed to see these great shows weakened, knowing that breeding for exhibition is not merely a pleasurable pursuit for many of our people whose limitations are great, but a moral force in giving them a pure hobby. At the same time, it is regrettable that, by the adoption of extreme and abnormal standards in judging, such exhibitions fail to exert their influence upon practical poultry-breeding, as they were originally intended and ought to do. It is long since the claim made that these shows are of general benefit was recognised as having any basis in fact.

Second, are the poultry sections of agricultural shows, some of which have very little indeed to do with farming pursuits, although they may have a few classes for larger stock as a sort of justification for the name they bear. Comprising poultry, &c., as a leading feature, and perhaps jumping contests, which have not the remotest connection with agriculture, save that the competing animals are horses, these shows are avowedly for fanciers, frequently run for and by them. In so far as they provide a local fête, an excuse for a day's holiday in the open air, these are to the good. Their influence upon practical poultry-keeping is small. When we come to the great National or County Agricultural Societies it ought to be altogether different. Every section at least should keep to the fore the practical end. I am afraid it is not so in the larger animals to the extent commonly supposed, and as to poultry, the fancy side is flagrantly apparent. A few do make

a feeble attempt to exclude the purely ornamental breeds, but the great majority, inclusive of the "Royal" and "Birmingham" fixtures, are, so far as the poultry sections are concerned, exhibitions in which the practical element is almost entirely ignored. The ruling bodies know nothing of poultry themselves, and act on the line of least resistance, either avowedly catering to fanciers without hesitation, or allowing themselves to be guided by men who have little or no interest in farming or practical poultry-breeding. As a result, farmers derive little or no benefit from such displays, and the prizes go almost entirely to ordinary exhibitors. So far is this carried that the judges who officiate at these fixtures are those whose names are common at those described in the first category.

The third class are the small local exhibitions, which do more good than the first two combined, in that they induce emulation among those who have at least some practical end in view, and who do not attempt the ultra-fancier types. It is to the last-named we have to look for helping forward the improvement of the breeds of poultry in our rural districts. Such exhibitions may be despised by fanciers, but they render a real service to the industry. Even with these, however, there is always a danger that breeds are included which have no economic merit or value, and that those which ought to be mainly encouraged receive scant favour. The fact is, popularity and numbers count for more than anything else. Much depends upon the judge selected, and it is here where local committees are often led astray. I was at a meeting some time ago at which the arrangements for a show were being made by a local society, whose object first and last was practical. Yet the gentleman selected as adjudicator is a fancier pure and simple, and cannot fail to award the prizes according to Fancy ideas.

Everyone must recognise who has considered this question that the present system is unsatisfactory. It is not too much to say that many who subscribe or offer prizes at poultry exhibitions do so under the erroneous idea that they are helping to develop home production and stem the tide of foreign imports. Did they but know the true facts of the case, it is certain they would refuse their money merely to fill the purses of pot-hunters or to glorify the stocks of breeders of Fancy fowls. One has only to listen to speeches at the opening of such shows or the dinners given at agricultural

exhibitions to realise how much these people are misled. In view of the strong hold which the present system has secured, the difficulties in placing it on a sounder foundation are very great indeed. When we remember that at least seventy-five per cent. of the exhibits in the first two classes are more or less useless—directly or indirectly—for practical poultry-keepers, it will easily be seen how harmful it all is, and how great the need of a drastic change.

I am led to these observations as a result of what I saw in the Fatherland during my visits to that country when preparing my "Report on the Poultry Industry in Germany," one chapter of which is devoted to "Exhibitions, Utility and Otherwise." It is necessary to remember that the exhibition system has a powerful hold in that country, that the number of fanciers is very large, and that shows are very popular indeed. When the Government and the German Agricultural Society determined to take measures for encouraging the poultry industry, the help of high-class breeders was obtained. It was soon found, however, that their ideas and interest were non-practical and calculated to do little towards the end in view. As a consequence their services were dispensed with. The whole scheme was reorganised with results stated below.

In Germany we find that there are two classes of poultry exhibitions, each filling its own place and occupying its distinct sphere of influence. There are the great national shows, from the bi-annual fixture of the great German and Austrian Union, of which the late Hugo de Roi was for so long president—his place is now occupied by Herr Kreutzer, of Frankfort-on-the-Maine, whom I met in that city some time ago—down the gamut of size and importance to the small club competitions. These are supported mainly by fanciers, of whom the aggregate number is very large. It would appear that there is scarcely a commercial or manufacturing centre in Germany at which there is no show. Thus in that respect the conditions are very similar to what are found in Great Britain. It is always the fancier poultry-keepers that are most in evidence and most voluble, which explains how it is that during the course of my inquiry I was astonished to find the opinion general that in Britain we are all fanciers, and that utility breeding is ignored. That is doubtless due to the influence of our Fancy Press.

Recent developments on the part of various national and State authorities have led to the establishment of another type of show, in which the utility qualities of exhibits are the first consideration, and from which the ornamental races are excluded. These are mainly the ordinary agricultural fixtures, although there is held annually in Berlin a great

central exhibition on utility lines. Some of the fancier exhibitions, as with us, have practical classes, but the main reliance is upon the German Agricultural Society, which is subsidised by the Government and provided with funds enabling it to offer prizes for breeds which it is desired to encourage. It has a strong poultry committee, and this is formed upon practical lines—or has been since the change referred to already was made. The money thus expended is rigidly applied to the production of food and not feather.

The first consideration is, what breeds are most suited to any individual district, for there is close discrimination in that respect. Yet the choice is by no means small or very limited. I find that no fewer than twenty-two breeds of fowls, five of ducks, four of geese, and two of turkeys receive recognition, among them many which originated in other lands, as the object has evidently been to find the best, whether native or otherwise. In fact, what may be termed imported races largely predominate. The important point, however, is that no breed which is not recognised as suitable is eligible to have prizes from the central funds provided for it at exhibitions within the respective districts. The effect is to give a great impetus to these breeds, which, so far as farmers are concerned, are increasing generally within these areas, in itself a great advantage, as it tends to equalise production. If I may guess what would be the case were such a system in vogue with us, we should find that in Sussex, Surrey, and West Kent the agricultural shows would limit their poultry classes to, say, Sussex, Faverolles, and White or Buff Orpingtons, as these are breeds favourable to producing chickens for sale to the fatteners, and in the West Riding of Yorks only Leghorns, Wyandottes, and Plymouth Rocks, as these conduce to egg production on the hills and dales of that great county. It may be thought that such limitation would considerably reduce the interest of shows, but that the ultimate gain practically would be great, I do not doubt. Fanciers and amateurs can keep what breeds they like, but it is all to the greater good if utility breeders in each district restrict themselves to those which are most profitable there. In larger stock this principle is to some extent adopted. What is good in one direction is equally so in another.

In addition to the county or district exhibitions, as we should regard them, there are a few which partake of a national character, such as that at Berlin already mentioned, and the annual shows of the German Agricultural Society, holding a similar position to that of our "Royal" and also peripatetic. Last year it was held at Cassel, and as I was in Germany at that time it was included in my visits. In these shows all the breeds recognised by the provincial Chambers of Agriculture

are included, thus giving a complete view of the whole. At Cassel separate sex classes were provided, that for males consisting of a single bird, for females of three hens or three ducks, or two geese or two turkeys. In addition, sections were given for young birds and for breeding pens, the last-named of which were accommodated with houses and yards, the ducks and geese having water runs. The classes for fowls were divided in accordance with their economic qualities—namely (1), non-sitters, (2) general purpose, and (3) table. The breeds included were as follows,

shows is that judging is by points, whilst the comparison method prevails in the ordinary German poultry exhibitions. Probably this arrangement is necessary with the former, otherwise external characters would be unduly exalted. In my report on the "Poultry Industry in Germany" will be found the scales of points given in detail, and to that I must refer the reader who desires further information.

Given that the object of agricultural shows, whether in summer or winter, is to encourage poultry on the farms and small holdings of the



A GERMAN FANCIER'S POULTRY YARD.

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the number in brackets showing how many classes were given to each:

- Leghorn (12).
- Ramelshofer (2).
- Bergische Crower, Lakenfelder,
and Turingen (2).
- Moven (2).
- Hamburghs (4).
- Minorcas (2).
- Wyandottes (6).
- Plymouth Rocks (2).
- Orpingtons (4).
- Langshans (2).
- Faverolles (2).
- Malines (2).
- Dorkings (2).

In each section were two any other breed classes.

One interesting fact in relation to these Utility

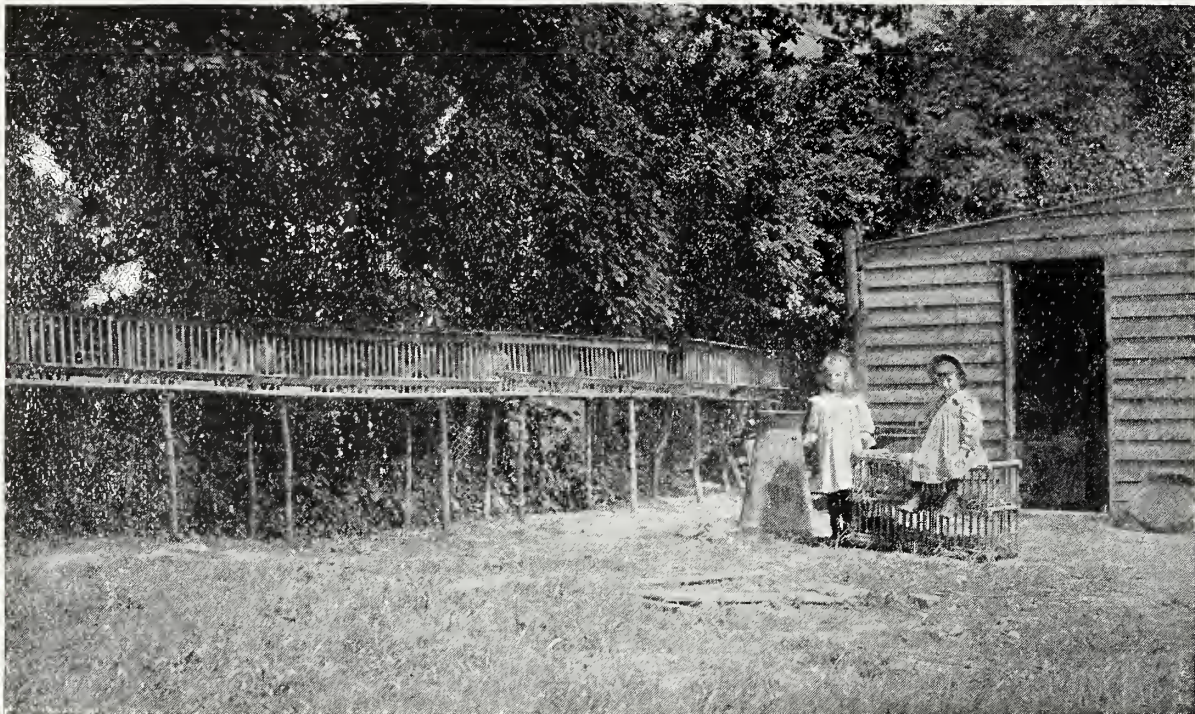
country, the present system is totally indefensible, as it fails in the accomplishment of that purpose. In only too many cases the aim is to secure a large entry or a big gate rather than the educational aspect. This is due to the fact that there is no attempt at uniformity of action and influence between those whose business is to develop the national food supply and the societies which run these shows, with the result that the teachings of one are often in direct opposition to the work of the other. To that extent, therefore, the efforts put forth are largely wasted.

There is no one more than the writer who enjoys visiting an exhibition which presents a complete view of the different races of domestic poultry, or to whom novelties, either in the shape of imported or evolved breeds, are more attractive. Such, however, is the place of, and should be relegated to, fanciers' exhibitions. It is not the

duty of agricultural shows, which ought to have a definite object in view, to do this. Their business is to bring prominently forward those breeds which are specially suited to the area they serve, and no more. As things are at present the visitor, unless he be an experienced breeder of poultry, is befogged by the diversity of type placed before him, and in only too many cases he leaves without having learnt anything of practical good. If he should be induced to make a choice as a result, the chances are largely against his choosing the best. And, further, the majority of birds exhibited, even if he stumbles upon a right breed, are totally unsuited to his purpose, as they are bred upon exhibition lines and not for productiveness. Such should not be. The farmer and small-holder has a right to expect that the annual agricultural

capacity, as is now so general, would reduce it all to a farce. Therefore, it is provided that those exercising the judicial function shall be practical poultry-breeders, in sympathy with the food aspect rather than feather or abnormal points, but maintaining the purity of race. Such men are available if called upon, but will not be found among the fancier lists of judges, with a few exceptions.

That the proposal here made is difficult of realisation I am prepared to admit. We do not accept central influence to the same extent as our German cousins, and are less amenable to control. We are accustomed to allow local committees to do as they like. Moreover, it is the power of the purse again. Prizes are offered by the respective German Chambers of Agriculture, the money coming from public funds, but only for approved breeds.



OUTSIDE CAGES ON A SUSSEX FATTENING ESTABLISHMENT. [Copyright.

The fattening process takes about three weeks. From ten days to a fortnight are spent in these outside cages, at the end of which time the birds are taken into a shed and crammed.

show of his district or county shall be a help, not a hindrance; shall consider his needs, and not be the happy hunting-ground of professional exhibitors, who care little or nothing for him or his interests. And I cannot but believe that ultimately, if such shows restricted their poultry classes to a few, they would attain much larger entries proportionately, as the local breeders would be more ready to compete. In addition, there would be the national shows, where all the practical breeds would find a place.

The Germans have realised that provision of classes for a limited number of breeds is not enough, as it is necessary the judging shall be on correct lines. To appoint a fancier to act in this

Whether it might not be worth while for central and county authorities to expend a little of their cash in this way need not now be discussed. If rightly applied, it would go far to confirm and extend educational work. But donors of subscriptions and prizes who desire to help forward the poultry industry could do much if they made it a *sine qua non* that such gifts should be devoted entirely to those classes which were of a practical nature. And, further, the committees of such agricultural shows should select practical judges alone, and insist upon awards being made in accordance with maintenance of the economic qualities of the exhibits. If that were done, we should see a great change in this direction.

PERSONAL LETTERS FROM AN OLD FANCIER.*

III.—TO A LADY POULTRY FARMER.

DEAR MISS MORGAN,—When your father, whom I knew long before you were born, and for whom I have a very high regard, told me that you had gone in for poultry-farming, and asked me to pay you a visit at the first opportunity, I scarcely knew what to say. It seems so brief a time since you were in short frocks and pig-tails that I could hardly realise you were old enough to undertake the responsibilities of life. Moreover, I felt afraid, for fear I must throw a shadow over your enterprise and chill your enthusiasm. But it was impossible to say him nay. He seemed to think that all poultry-people are engaged in the same work, forgetful that there are more branches than in ordinary farming, and that a man or woman who is *facile princeps* in one may know little or nothing of another. I once saw a man whose whole business in life was to make laceholes in boots. If he had been required to stitch on the sole to the upper he would have hardly known the way. However, as your esteemed parent was so anxious for me to come, I agreed to do so. He told me it had been pretty costly so far, but in these days when there is so much unrest, it was probably cheaper than if you went in for smashing shop windows. Certainly, to be a poultry-farmer is more lady-like, and if you come out well, as I hope you may, it is constructive—not destructive—and, in any case, does not land you in Holloway Gaol.

Perhaps, after all, I know something about it. Since returning from visiting you my memory has gone back many years to a venture in which I was a partner, but which came to a disastrous end. The record is in one of my pigeon-holes. It tells only part of the story—the financial—how that in two years we lost all the money we had put in and a good deal more. Yet it was worth it. I learnt more about poultry-breeding and feeding in those twenty-four months than had ever been dreamt of. If the total loss was distributed over the years which have since elapsed the games would be on the right side. With what high hopes we embarked on our enterprise. Everything was *couleur de rose* on paper, an arithmetical calculation even to fractions and decimals, in which no mistake seemed possible. We could even see the division of huge profits at the year-end, and one of our partnership almost took a house and got married on the strength of it. Fortunately, his *fiancée*

could not see how they were to exist on the possible profits of a year hence, as she wanted meanwhile to pay the baker. Strange to say, the hens did not lay when we wanted them. They struck whilst eggs were twopence each, but as soon as the price fell to ninepence a dozen there were plenty. Infertile eggs, and “death in shell,” and mishaps to our broods upset all calculations, as did the general expenses, which we had never thought of. Then we got disease in, all the “—itis” in chicken creation, and that finished us. The fact was, we thought anybody could run a chicken farm, and had to learn, in a costly manner, that experience with a score hens does not prove the capacity to handle a thousand. My account book is labelled “Malpas’s College Bills.”

It was, however, a poultry-farm so long as it lasted, although we could not add the word “profitable” as a prefix. Fortunately, few people knew of our venture, as we did not make ourselves look foolish by singing a “Hallelujah Chorus” before we began. No name was given to it. Even printed notepaper was avoided. The term “Poultry-Farm” is often applied, where there is no justification, to back-yard or cottage garden plants, in which there are certainly a few fowls, but the farm is in the heavens if anywhere, for it is not on the earth. Glorified letterpaper—at five shillings a half-ream—gives a grand look to it. Some time ago I heard of a so-called duck-farm on which there were six birds, and the owner—he called himself proprietor—set up books on the double entry system capable of dealing with a £1,000 a year business. Let me ask you to lie low, to say little, to let your record speak for you. Wait until you have done something before you talk about it. “Let not him that putteth on his armour boast as he who taketh it off.” The Frenchmen, in my young days, cried “à Berlin,” but the Prussians came to Paris instead. Men brag more than women. Leave it to them.

Your father told me where you had gained your experience, and the place seemed wisely chosen. That explained at once how you have been able to design and lay out so well-arranged a place, with which I was much pleased. It was wise of you to copy so excellent a model. Never be afraid to do that. It is better to walk on a well-trodden road. Of course, everything was spick and span when I arrived, but you knew I was coming. The point is, what will it be like when no one is expected? Some day I will drop in unawares. But, frankly speaking, the question is whether six

* The previous letters have been: No. I., “To a Young Judge,” March, 1912; No. II., “To a Show Secretary,” April, 1912. The next will be addressed “To a Disappointed Exhibitor,” and appear in our June issue.—EDITOR.

months' training will enable you to meet the difficulties which are sure to arise. You can only have touched the fringe of the business. Take no step until the last one has been firmly fixed. Make haste slowly. When you find you can keep profitably fifty hens you may go on to a hundred; when you have reared a hundred chickens successfully in one season you may attempt twice as many the next, but not until then. Rest assured that if the smaller numbers are unprofitable, the larger will add to the adverse balance. I know it is tempting to go fast, but doing so leads to failure. Remember that at first detail is of supreme importance. Leave the larger views until later. You may do well if you gradually proceed, learning as you go, not breeding or producing beyond what you can sell, and not selling in excess of what you can profitably produce—that is, if your father will stand it. It is not the total volume of sales, but the margin after expenses are met, which denotes success. Many fail because they breed far more chicks than a profitable outlet can be found for, and these eat their heads off before they are turned into money. All the time be learning. The moment your enterprise gets beyond your knowledge or ability to handle, then the end is approaching.

What struck me most was that you have no clear idea of what is to be your speciality. The ordinary farmer, to whom his poultry is a side issue, may generalise and be content with catering for the regular markets, but the poultry-farmer must be a specialist if he or she intends to make money. The expenses are proportionately too great in relation to the returns on the ordinary basis. Therefore, find out some line which you think is likely to pay best—such as sale of pure-bred stock, adults and chickens, eggs for hatching, or any other branch, and stick to it. The piano practice must come second to the poultry, the lawn tennis to the laying stock. Money is to be made in the way indicated if you have grit and determination, and do not fear dirtying your boots. But it will not be by pottering about doing a little of everything.

You mentioned that you had bought eggs from what is called a 200-egg strain, and had calculated out that with a hundred hens you should be able to get 20,000 eggs in the year, bringing in nearly £100, and at a food cost of about £25. If that could be done, everybody would go in for poultry-farming, as it would pay better than the Civil Service, some branches of which of all the pursuits I know give the greatest return for the least effort. But, my dear girl, it is all bunkum. Hens are not built on these lines. I was reading lately what one writer said about averages, and agree with him that these are the controlling factors. A few prolific layers make very little

difference to the balance-sheet. It is the total which determines the profit or loss. Some hens are the Amundsens of the poultry hemisphere, reaching the pole of high prolificacy, but for every one that does so a hundred or a thousand of the same breed or strain fail if even they have a try. They may cackle like Cook did about the North Pole. That does not prove anything. More than forty years ago I had a hen which we could hardly stop laying. She got well beyond 250 eggs in the year. The others resembled onlookers at a football match, they watched and watched—even shouted now and again—but forgot that they were expected to do likewise. The average was not much more than eighty each. Her chickens were no better. The children of a genius are generally dullards. That is why so many people are proud of their forebears and glorify their pedigrees. They have not the capacity for doing anything great, and live in the glories of their ancestry. Success is made up of the ordinary, not the exceptional. My advice would be to regard the abnormal layers as freaks, take what they give you, but never depend on them. When any breeder who advertises a 200-egg strain can prove that twenty-five per cent. of the pullets bred from his stock attain that number in flocks of not less than a score birds, we shall be a long way nearer than is the case at present.

This leads me to suggest that you should not believe all you hear or run after every new idea. That is the way to spend money—not make it. Many of these notions are not new at all, but simply repetitions of exploded fallacies brought up again to catch novices. Wonderful progress has been made in my time, but the way is strewn with a score—or even a hundred—abandoned projects for every one that has proved to be valuable. It is so on every side of human life, but especially where appliances are of low cost. Whenever you try a new method do it on a small scale first, and in nine cases out of ten you will find it is no better, or that the labour and expense are greater than the gain, if any there may be. Diamonds have been made, but the process was far greater in cost than the value of the product. It is of no use spending a pound to get a chicken worth five shillings. And it is also true in buying stock. An old friend once paid £100 for a Game Cock. He found it the best paying investment he had ever made, for it brought him in many hundreds. He was an exhibitor. It takes a good many eggs to pay for a £5 hen. There must be some relation between cause and effect. There are many amateur poultry-keepers who like nice birds, and are willing to pay prices beyond the actual value, not caring whether they are profitable or not. The pleasure is their reward. The poultry-farmer cannot exist on those lines, but he thrives on these people.

This leads me to say a word about exhibitions and exhibiting, in which, as you know, I am specially interested. Proceed slowly is my advice. The educational value is immense. You will never be able to appreciate the merits or demerits of your birds until you see them alongside others. There is no advertisement like a win at a good show. It is worth more than anything I know to obtain customers, as it at once enhances the price which you can secure for stock and eggs. It would be folly to suggest that you should not exhibit unless you know you can win, especially at first. On the other hand, it is useless sending birds to compete unless there is a chance of doing so. What may be perfection in your eyes will

One thing has to be learnt by everyone who takes up this pursuit—namely, to be always before and never behind your work. Five minutes earlier in the morning will prevent many a loss. Many there are who do the right thing at the wrong time. I once knew a man who was fined heavily for giving too much weight. His scales were wrong, but against himself, and the law demands exactitude. That is the point to aim for in all your work and transactions. An unrepaired fence, only involving five minutes' labour to put right, may cause a loss of pounds. That is a lesson every poultry-farmer has to learn. Probably you have heard of the barber who joined the Salvation Army. With the zeal of a new convert he determined to



A BIRD'S-EYE VIEW OF THE RANCOCAS POULTRY FARM (U.S.A.),

Showing the Laying Houses Among the Trees.

[Copyright.]

generally reveal unsuspected faults when alongside others. It is quality, not quantity, that tells. You may spend a lot of money in entry fees, only to inform the whole world that your birds are inferior specimens. Whereas if you send one bird and win with it, the rewards will be far greater than the prize money, which seldom pays more than the expenses. Get some good fancier—and there are many such—to advise you. But insist upon knowing the reason why. Then you need not be afraid. One win in a season will do you more good than such a victory and several failures. Be content with that. There is so much trickery and chicanery among exhibitors that I hope you will not plunge too deep.

say a word to everyone with whom he came in contact. The next morning, having lathered his first customer, as he stropped his razor for the shave, he said, "Sir, are you prepared to die?" The affrighted addressee bolted, lather and all. Perhaps the words were wise, but the occasion unsuitable. Be in season with all you do. Nor must you be squeamish. Whatever has to be done it is your business to do. If you pick and choose, then there will certainly be a leakage. One good old lady made pets of her birds. They were tamer than children. It nearly broke her heart to sell any. And when one had to be killed she went away for the day. There is no sentiment in keeping poultry. It is a prosaic, matter-of-fact busi-

ness, in which the knife is necessary. I must confess that my preference is not to eat favourite birds; therefore, it is better not to have these. Be careful in your instructions. A well-known lady exhibitor had a rule of putting the culls in a certain shed for her man to kill. One day he was away, and for convenience's sake she put a score of her best birds there overnight, intending to tell him that these were not for slaughter. He came earlier than usual—she slept in. They were all hanging plucked awaiting her advent.

Your father tells me that you hope soon to get one or two lady pupils. First, ask yourself what you can teach them. It may seem an easy way of making money, but can you give value in return? We had not learnt that trick in my earlier days. Many poultry-farms are said to exist on students' fees, some of whom pay their money down for six months and clear off, tired of the business, before four weeks are gone, or simply dawdle about the place doing nothing and learning less. The only way is to work every pupil almost to death the first month or two, making them undertake the hardest and dirtiest jobs. If they stick, then these are worth having and will do you credit. But do not be in a hurry. Be master of your work ere you attempt to teach is a wise axiom, and that cannot be for some time yet.

There should always be more duties to perform than pupils to undertake them. Some time ago a man advertised broadly for students, and as he had a good address he got them. When they reached the place there were certainly a few fowls, but no farm, and they were told that they must buy their own stock and he would give instructions in management. You are not that sort, I know. There is danger, however, in the temptation to get before you can give. The golden rule is your surest guide.

For vigorous health and pure enjoyment, for giving an interest in life and an object for which to strive, there is nothing higher than poultry-farming, where those embarking upon it have patience and determination, together with the requisite energy and knowledge. May you succeed is the earnest hope of

Your father's friend and yours,

ENOS MALPAS.

P.S.—I have heard a rumour that someone else is taking a keen interest in your enterprise and is frequently helping you. If it is true, perhaps the poultry-farm will not continue long. But it will be valuable experience meanwhile, and perhaps be useful later and elsewhere. Of the two, Mr. Right will be better than all the chickens in the world.



AN AMERICAN TYPE OF LAYING HOUSE.

[Copyright.]

THE FUTURE OF BRITISH EGG-PRODUCTION.

By W. M. ELKINGTON.



SINCE the year 1898, when laying competitions first began to create a stir in this country, we appear to have made considerable progress in the business of producing winter eggs, and though a generous share of the credit must be given to better methods of housing, feeding, and management, we cannot deny that progress has been due in a larger degree to the well-directed efforts of specialist breeders. One has but to look back over those few short years to realise what has been done. I well remember what a stir was caused in 1900 when Mr. Caleb Bird's Silver Wyandottes set up a score of 223 eggs in four months. It was considered a phenomenal record at the time, and Mr. Bird put up a prize for the first pen that could beat it, which was not won until three years later, when American pedigree-bred stock made their presence felt by raising the record to 276, and, incidentally, opening the eyes of British poultry-keepers to the possibilities of specialist breeding. Since that time the most noteworthy and obviously the most desirable advance has been in raising the averages in these competitions, though individual scores have been increased as well, until in the present year of grace we have the satisfaction of seeing a winning score almost double that of 1898, and an average that proves even more conclusively in what a marked degree the standard of productiveness has been raised in less than a decade and a half.

Equally significant and equally desirable is the gain in hardiness, for to the credit of British breeders it must be said that this essential trait has not been sacrificed for the sake of prolificacy. There may be legitimate grounds for criticism of the sixteen-week laying sprints, in which the element of luck may and does frequently influence the result; but one cannot deny that these provide a real test of hardiness and prolificacy combined. The moulting that has been so prevalent in some competitions, and has scarcely affected the birds in their home quarters, proves that competitors are somewhat severely tried. The conditions have been expressly framed as a trial of hardiness and to obviate the possibility of coddling or unnatural forcing. Indeed, there is not the slightest reason for supposing that whilst egg averages are being raised the standard of vigour and hardiness is being lowered. Facts clearly indicate the opposite. The only tendency in these exceptionally prolific laying strains that may be characterised as undesirable is that in the direction of

smaller eggs, which provides matter for careful consideration, though it by no means implies serious danger whilst the authorities are alive to the necessity of encouraging and rewarding standard-sized eggs and discouraging those whose saleable qualities are open to question.

Taking it on the whole, specialists have made a substantial gain, and one is led to wonder what another decade may bring forth. Shall we see winning scores of 360 in a sixteen weeks' competition (meaning 90 eggs per pen, or $22\frac{1}{2}$ eggs per bird per 28 days), which does not seem impossible when we recollect that some birds have put up scores of 25, 26, and even 27 eggs in four weeks? It would seem that such a record might be reached through the happy chance of selecting four prolific, consistent pullets of a non-sitting, hardy strain that would make light of change of quarters and other disabilities. Many breeders could, no doubt, pick out four pullets from among their flocks that would approach, if not exceed, this record, so that one realises more completely the luck of laying competitions. But supposing that chance came to the rescue for once in a way, what further developments might be expected? Could the productiveness of hens be still further increased in a marked degree, or have we approached the limit where further progress in prolificacy must be accompanied by a compensating loss in the size of eggs, so that breeders would need to consider whether further efforts in that direction would result in gain or loss?

Though we cannot tell what the result will be, breeders will doubtless try for increased prolificacy so long as any appreciable headway can be made. But though conjectures may differ as to the standard ultimately reached, I think it will be generally agreed that for the present breeders will do well to camp on the ground they have gained, occupying it completely by bringing up their reserve forces, as it were, and levelling up their strains to the high standard they have set. We may take it that the main purpose of these laying competitions is to raise the standard for the benefit of the industry in general, and the competitions would deserve to rank as mere sporting events if the rank and file were not able to take advantage of their lessons and the practical gains they have secured.

We can and should use the work of the specialist breeders in many ways for the benefit of the industry. In the first place, as a demonstration of the value of system in breeding, feed-

ing, and management the spectacular side of the laying competitions has a distinct value. It cannot fail to impress a farmer who has not had an egg since November when he reads of the wonderful scores achieved at Worcester, at Preston, and at Burnley, under what are almost ordinary farm conditions. And if he is a thinking man, he must realise that these results are due to something more substantial than mere chance. He may inquire further, and learn the significance of the word "strain" and the influence of good feeding and management upon hens of an active and useful type. And if it eventually stimulates him to replace his degenerate, unprofitable stock with birds that have been bred to lay, and to manage his poultry with some regard for consequences, it will be a great gain to him and to those of his neighbours who may be tempted to follow his example.

One can generally convince an Englishman by appealing to his business sense, and the obvious advantages of keeping bred-to-lay hens will, in time, overcome the indifference that has in the past proved fatal to poultry-keeping on farms. It is not because he is a poor business man that the average British farmer neglects his opportunities of making profit from poultry, but because it is only within recent years that we have been able to offer him conclusive proof that a well-bred, well-kept flock of fowls is a very different proposition to the degenerate mongrel hordes of all ages that have, by years of custom, been given the run of the farm-yard and any tail corn and rubbish that happened to be available. It takes longer for a practical lesson of this kind to sink into some than others, and there are many obstacles that can only be overcome in course of time, such as the ignorance of farm labourers and their unwillingness and inability to make themselves acquainted with a few simple rules regarding the management of poultry. Often enough the farmer may be a willing convert to better methods of production, though unable, through circumstances, to put his faith into practice. It is a fact that many have restocked with well-bred utility fowls, to find that even these require reasonable attention and management to yield good results. Progress must necessarily be slow among the farmers, for the reasons set out above, which are not imaginary, but very real, especially the difficulty in securing efficient help from among the farm servants.

The changing situation is likely to have more immediate and farther reaching effects upon poultry farmers and others who make a special feature of keeping poultry for profit, and the question arises whether increased prolificacy will enable us in the future to make egg-production for commercial purposes on an extensive scale a

more profitable and safer undertaking than it has been in the past—whether it will lead to the establishment of great egg farms, such as we read about in the United States. There is a powerful argument for those who favour this view in the fact that prices have shown a decided rising tendency during the past decade, and if, as the possibility has been suggested by well-informed authorities, some Continental supplies should be diverted to other markets, a further opportunity would be provided the British egg-producer of building up a profitable business. The market is already available, and the only question is whether, under the new and improved systems of breeding and management, eggs can be produced at a sufficiently low cost to realise a profit that will cover all the incidental expenses of a large establishment. Statistics prove conclusively that it is possible to make a large egg farm pay a handsome profit, but statistics have failed us so often in the past that we must not place too much reliance upon them even under altered conditions. Practical tests alone can show whether the modern heavy laying hen and modern methods have between them dissipated the risks and uncertainties of commercial poultry farming on an extensive scale.

The best results in egg-production have up to the present been obtained from small or moderately small flocks, which lend themselves to the work of the pedigree breeder better than the large flocks of the egg farm. The man with the moderate sized, manageable stock of hens can with comparatively little trouble select and weed out, so that the average production of his entire flock is brought relatively high, whereas among the hundreds kept on an egg farm selection is a far more difficult matter, and the weeding out of wasters becomes almost an impossibility. For that reason one could not expect anything like the same high average from an extensive flock kept on American egg-farm principles as one might easily get from a smaller and consequently more select stock. True, one could and should breed entirely from selected birds of good pedigree and proved merit, which would ensure a certain degree of efficiency, though it would not entirely eliminate the poor and indifferent layers from a large flock.

Equally important is the question whether large flocks could be kept for commercial purposes economically enough to ensure a good profit, and there is this to be said in favour of the modern heavy layer—she is relatively smaller than the average utility fowl of twenty years ago, though whether her appetite has diminished in like proportion is quite another matter. In my opinion, it is a mistake to represent the modern heavy layer as a small eater, which may lead to



A PARTRIDGE WYANDOTTE.

the belief that she can exist upon very little. As a matter of fact, she can; but if one is feeding for eggs one must not be parsimonious, and I think the real truth about the modern useful little hen is that she requires just as much food as her less useful forebears, but makes much better use of it. Economy in feeding is not practised by reducing the supply, but by the avoidance of waste and judicious management, to make every ounce serve its useful purpose; and as most people are aware, it is a much easier matter to see that each bird has enough and to avoid excess and waste when one has small flocks to deal with than when the birds run together in flocks of one hundred or upwards.

These are the arguments that throw doubt on the question whether egg-farming on an extensive scale has been rendered practicable through the substantial gain in prolificacy and hardiness attained by our specialist breeders. As I have said, events and practical tests must reveal the truth on this point; but, however it may be,

there is not the slightest doubt that the lot of the farmer and the moderately small poultry-keeper has been made brighter. There is now no excuse whatever for people of the latter class to keep fowls of the common mongrel type, for the plaint that they are cheap can no longer hold good if we remember that the best is the cheapest. Besides, as prolific strains become more common and more generally kept, the fancy prices that are demanded by some people at the present time must inevitably disappear, except, perhaps, in the case of a few special strains in the hands of premier breeders. A national revolution to oust the degenerate type of hen and make a clean sweep of bad and careless methods would put thousands of pounds into the pockets of British poultry-keepers, and we may hope that before many years have passed the public will have realised the menace of bad management. In the future of British egg-production none but the best modern hens and the best modern methods can have a part.

THE INVISIBLE CHICKEN. THE WONDERS OF EGG-GROWTH.

NO. 3.—THE FORMED CHICK.

WRITTEN AND ILLUSTRATED BY JAMES SCOTT.



FROM about the forty-eighth to the one hundred and twenty-fourth hours it is best to observe the changing embryo while it lays on its side. Indeed, it would be somewhat difficult to place it in any other position without taking very great trouble. The heart is very prominent at the age of forty-eight hours, and appears as a protruding bladder not far from the head. This organ is gradually smothered by successive layers of substance. Blood-vessels connect with it, but are not very noticeable until a later period—say, when the chick is about seventy hours old. Prior to this time, it must be explained, pale ramifications of tubes can be seen, but they are very far from as clear and well-formed as during the stage mentioned and onwards.

At forty-eight hours the neural tube is very boldly outlined. This feature is the spinal cord, known during the earlier modifications as the notochord. At fifty-four to sixty hours the heart is much larger; but there are not many changes which would attract anyone except a biologist. As a matter of fact, right away to one hundred hours there does not occur any alteration, beyond that dealt with in the next paragraph, which could be described in understandable language. The embryo assumes a hunchback attitude,

gradually doubling upon itself until the tail and the head are very close together. The internal organs are, meantime, being formed, and these are very intricate.

When the one hundred hours period has arrived the surrounding blood-vessels begin to assume more important characters, as their walls or sides are thickened and their diameters increased.

That these channels are not very definite at first can be understood by referring to Fig. 9, where a fork or junction of two of those visible in Fig. 8 are shown greatly magnified. What to the naked eye appears as firm, solid threads are then found to be composed of collections of minute cells, which can only be distinguished from the surrounding ones by their greater density. The scientist can, as might be expected, see some details which would escape the notice of most people; but, speaking in a broad sense, there is very little difference between the various items mentioned.

In the stage reached by about ninety hours' incubation a very remarkable organ is displayed. This is shown in Fig. 10, and is the *allantois*, which is really a breathing contrivance. It comes as a kind of bud on the posterior half of the embryo body, and is at first simply a globular membrane. It has a direct connection with the food

canal. As it grows it fits into a space provided for it between the folds composing the *amnion*, which I will soon describe. In its mature condition it lies just beneath the shell, for the purpose of more conveniently receiving oxygen

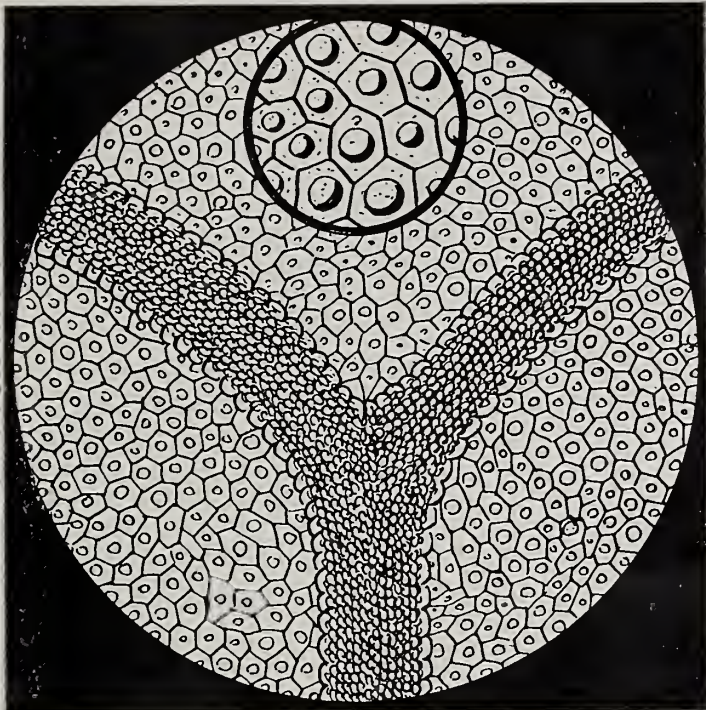


Fig 9.—A magnified pinhole view of one of the forked blood-vessels shown in Fig. 8. It is surrounded by cellular tissue forming from the albumen, &c. A portion, shown larger above. [Copyright.]

from the air that enters through the pores of the shell. When the chick hatches the *allantois* loses its functions, which are relegated to the lungs. In other words, as soon as the bird breathes outside air it ceases to use the organ which abstracted the oxygen for use inside the egg. Some portions of it may become converted into a useful adjunct of the matured body.

I have already said that the embryo is loosely enclosed in a membranous wrapper. This is called the *amnion*, and consists of two layers with a definite space between them, although the space is practically invisible, even when all parts are hugely magnified. As a rule, the under space is filled with water to prevent occasional shocks having any deleterious effect on the embryo. This *amnion* is torn and cast off when the chick hatches. It is between one part of these membranes that the *allantois*, already described, is placed.

At this point it will be convenient to state the following facts. It was at one time believed by scientists that germination produced a fold of substance with an inner and outer skin, and that the first evolved into the lining of the mouth, wind-pipe, stomach, intestines, &c.; while the second comprised the outer skin, and the middle space of

the fold became the flesh, bone, and similar structures. At present we are dealing with observable phenomena, and not merely theories.

With regard to the formation of the limbs, these begin to show about the period of ninety hours' incubation, the hind ones appearing first as simple swellings near the tail. Next, before one hundred hours have passed, the fore limbs—as the wing bones are called—show themselves in a similar way, near the middle of the body.

So rapid is the growth of the hind legs in comparison with the fore limbs that their toes are practically complete and exposed, whereas the foundations of the wings remain tightly impacted against the breast. It is true that at this time the downy feathers disclose themselves over the body, and that when the bird hatches its little fluffy wings will be released; but before this culmination one can handle the legs because they are completely extruded, while the wings are confined. A person can, indeed, lift the embryo at the period mentioned by means of its legs.

The tail reveals itself, between sixty-eight and



Fig. 10.—Nearly life-size embryo on the upper slide: detached embryo, magnified, in the larger circle, showing the *allantois*, or breathing organ. [Copyright.]

seventy-two hours after incubation, as a somewhat sharp and definite point on the thinner end of the embryo.

The ear is discernible at eight days as a tiny orifice, or pit, behind the swollen forepart, previously spoken of.

It should be understood that the *amnion*, or wrapper, is during the preliminary modifications either partly or wholly transparent, so that it is hardly noticeable except at its unbroken edges,



Fig. 11.—The object shown in Figs. 5 and 10's here revealing the appearance of a chicken. It is still wrapped in a covering connecting it with a host of blood vessels. About nine to ten days old. [Copyright.]

which are visible just as are those of a glass tube. From about the one hundredth hour the *amnion* gets denser, and therefore does not allow so much of its contents—viz., the embryo—to be seen unless it is flattened between two glass slides, when, of course, being moderately bulky, it is squeezed out of its true shape.

Later on I may be allowed to go deeper into the details of these very interesting and puzzling features.

The head is almost as large as the body towards the final stages. Indeed, it may be regarded as the largest portion until the time of hatching has nearly approached. In the stage of eight days' incubation, especially, this fact is observable, the head being very bold; whereas the body occupies much less space. The diameter of the well-formed eye is then actually about one-sixth or one-fifth of the total length of the embryo. This is a very remarkable fact. Of course, in the very beginning, no true head or body can be said to exist; but at eight days the parts are entitled to receive the definite names.

By the time eleven days have passed the chick is a very neatly-formed object, even the tongue being visible between the halves of the opened

beak. The chick appears like a little being wrapped in a leaf (the *amnion*), the veins of the latter being typified by the interlacing blood-vessels. By cutting this part open and laying it back, the chick can be seen as in Fig. 11.

When the bird is ready to hatch it resembles a nut kernel in so far that it is tightly enveloped in a skin—the *amnion*—and is separated from the shell. The upper part of the beak then possesses what is a most extraordinary feature, and is one of which few people, even poultry-keepers and breeders, have any knowledge—namely, a distinct prominence known as the “egg tooth,” which plays a very important part in enabling the nimble creature to rip and crack its way from its prison-home. Of course, this peculiar adjunct does not persist in active life.

Even this liberation of the chick by itself is a feat worth close observation. When well and properly undertaken a definite regular crack is made round the “waist” of the egg, by the chick turning its head as far to each side as it can reach, and striking or biting it with its beak, thereby breaking the case into two symmetrical portions. Then it pushes itself forward and tumbles out so funnily that one unequal half of the shell may be jerked into the other portion. The wrapper so often referred to is then found in shreds.

EFFECT OF CLIMATE.

NATURALISTS have noted the falling-off in the wool-bearing character of some breeds of sheep reared for a number of years in a warm country without the introduction of new blood from the parent stock from a cold country.

I have observed the changes affecting our fowls with equal force as it has any other of our domestic animals.

The “Asiatics” are affected externally and internally, for I have noticed the very clearest strains of Light Brahmas under our suns and coast-fogs become discoloured—a straw colour showing on hackle and saddle that in a few years becomes more and more a fixed characteristic of the chicken bred.

The Dark Brahmas are similarly affected, for the purest strains of “Steel Grey” turn a reddish brown, while every generation subjected to our climate shows more of the brown feathers.

Plymouth Rocks show the same tendency; from their every-day “Grey suits” to dingy brown. White Leghorns are similarly affected as the Light Brahma. Of course I do not mean to say by this we cannot breed standard birds to colour. Nevertheless, it is true, climate in California is against the same excellence of feather (to a greater degree) than it is in less burning and tanning countries. Look at us Western men when we walk among the Eastern “tenderfoot”; we are surely in great contrast with our bronzed faces and hands to the pink and white of the complexion of our brethren of the eastern seaboard.—*Poultry Monthly* (U.S.A.).

A PLEA.

By J. STEPHEN HICKS.



NATOMICAL experts and naturalists generally have, it is to be feared, proved pretty conclusively that *gallus domesticus* occupies a low place in the scale of animal intelligence; but that the instinct, or whatever you like to call it, of our favourites is quite so depraved as these learned gentlemen seek to make out, we fanciers are loth to admit. And, indeed, there is much reason to suppose that it is the fancier who can claim any credit there may be for the awakening or improvement of "Biddy's" brain power; for while the scientist has probably confined his attention to the ordinary barndoor specimen, the better bred species having been for many years now far more closely associated with man, have surely benefited therefrom, become more domesticated, and therefore intelligent.

Is it not conceivable that the same process which, almost within the memory of living man, has turned out Doctors of Law and Divinity (amongst others) from races but a comparatively short time ago entirely savage, may also be at work, more or less, in this particular case?

The difficulty, of course, is to find out where instinct ends and intelligence begins, and one supposes that any mongrel hen could be merely tamed if one took sufficient pains; instances, however, are certainly not lacking which tend to show that more highly-bred birds display gleams of reasoning power at times. That our pedigree stock recognise their attendants is sufficiently obvious to all who keep them, as is also the fact that the presence of a stranger renders them nervous and unwilling to show themselves. Personally, I have continually noticed, too, that birds seem to be aware when one has come to capture them, and, conceal the hamper as you will, and fast them previously as you may have done, they are by no means willing to come forward to feed, though at other times they would have been swarming ravenously round your very toes.

Admitted that when a fowl or a chicken becomes thoroughly frightened it will behave very stupidly, but, then, so will any creature under similar circumstances; moreover, though it is exceedingly difficult to drive birds through any particular gap, you will find that (as a general rule) when they have wandered of their own accord from their accustomed runs and have, maybe, spread far and wide afield, they will always find their way back again at night; and should the gap or gate that admitted

them to freedom have been closed up meanwhile, there you will find the wanderers at dusk grouped round the exact spot whence they originally issued.

Young chickens may be rather "nice" in their habit of sticking closely to their accustomed sleeping quarters, but I have found that maturer birds may simply be thrown down by day into a fresh run, and will discover and enter the roosting sheds at dusk, wherever these may be situate in the run.

Take a peep now with me at a fairly commonplace sight in a fancier's yard. The owner has entered a run, and stands beside the shed therein. Suddenly a pretty pullet, possibly his favourite, jumps up to the roof of the shed and cranes her neck at him inquisitively. The man strokes her, tickles her wattles, and talks to her, rather childishly perhaps, but the pullet seems to understand, for she tries to make answer in a series of pleased and gentle "ca-a-ks." Do not tell me she is utterly devoid of intelligence. One could almost swear that later on, when maybe she has won a prize or two, and is conscious of the fact, she recognises her master when he comes up to her pen at the show with a titbit and a little congratulatory sentence: "That's the way, good little girlie; have a nice piece of brussels sprout, then"; to which she replies, "Ca-a-ak—hullo, master!—ca-a—I've won again for you, you see!—ca-a-a-k—thank you!"

That dogs, to mention only one other domesticated species, have improved in intelligence through close association with man is unquestionable; therefore, it should follow that the near attention the fancier gives his flock tends to improve them in the same way, though the process must necessarily be far more gradual, and the two cases are not precisely analogous. The establishment of lines in pedigree-breeding may also have a similar tendency, though the whole thing is indefinite and difficult of explanation. As an illustration (somewhat vague, it is to be feared) of what is meant, some eight or nine years ago, when I first began to exhibit fowls, they invariably gave some trouble while in the washing bath, struggling wildly to escape, and also took some days to settle down into form in training pens. Now the descendants of these same birds are as a rule quite docile, even at the initial bath, and seldom require more than a day's training.

Instances of sagacity on the part of poultry are, it is true, not particularly common, but this

is due more to the lack of interest in such doings evidenced by the general public than to their non-occurrence. I well remember, while staying some time ago with an old friend, a well-known fancier of Leghorns (now, alas! gone over to the great majority), seeing one of his two-year-old cocks gravely stalk up to a little contrivance in one corner of the old barn, catch hold of a cord in his beak, walk backwards until he could exert a slight tug upon it, and then come forward again to partake of the breakfast disclosed to view by his exertions. Of course, only a very slight pull was necessary to work the catch that released the shutter concealing the food, but it was distinctly a clever performance on the part of the cock, even if you consider the way in which the trick was taught him, which was simply this: At first a piece of meat was tied tightly round in the string at one end and the bird naturally tugged at it, thus releasing the catch. For about a fortnight he did this twice daily, never getting any other food but what was revealed by his own efforts at the back of the shutter. Then in place of the meat, the string was merely greased, plentifully at first, and very, very gradually reduced in the quantity of the fat smeared on, until at the end of three months he pulled a new, unbaited cord without hesitation, and always thereafter took his meals that way. I write "always thereafter," but this is as a matter of fact not strictly true, for, when on the second morning of my visit I requested another view of the performance, the catch or spring, strangely enough, refused to work, and the poor cock's efforts, tug as he would, proved ineffectual. The contrivance was sent off to the local man who had made it, to be mended, but unfortunately I never heard what became of it or the cock, for the death of my friend occurred soon after.

Hearsay evidence is not direct, but there is no reason to doubt the statement of a working-man—a back-yarder—who informed me at the last Dairy Show that he possessed six hens who could be relied on to answer to their names; he admitted upon close questioning that it was a case of "more or less," and that when he called "Sue," "Polly" and "Jane" might or might not appear also in her wake, but the point was that "Sue" would come *first*, as would "Polly" or "Jane" had *they* been the ones called.

Under the heading "Science Jottings" in a recent issue of *Poultry*, a Miss Prideaux, writing to the author of the notes, reports, with reference to a couple of blind chickens, that "they stole along side by side. . . . If I stood near they would make straight for me, even when I stood still. . . . They tumbled blindly over every inanimate object in the line of march till they reached my shoes, which they climbed on to, and

remained there quite content. *Empty shoes did not satisfy them.*" The italics are not mine, by the way, and speak for themselves without further comment.

In 1908 I had three pullets in course of preparation for the Dairy Show. These ladies were allowed out as a special favour for an hour or two's exercise on the croquet lawn before retiring. On the first evening of this treatment I was sitting, about six o'clock, indoors doing some work, when I heard a gentle "caaing" just outside on the front steps. This grew louder, and presently peering out, I observed three forms slowly stalk in through the open hall door and then, turning to the right, vanish into the drawing room. Shortly after a discordant thump or two proclaimed that one, or more, was walking about on the open piano. Going into the room I discovered one bird still walking up and down over the keys while the other two were seated calmly on the lid of the piano much interested in the (?) music. Removing the third pullet alongside her fellows, I sat down and strummed on the instrument, which seemed to please the birds greatly. Anyway next evening and each succeeding one until their departure for the show the same process was repeated, with this difference, that I was generally found seated and playing when they entered the room, and whereas the two invariably scrambled up to the former elevated position, the third would fly on to my knee and thence to my shoulder, remaining there until I grew weary, and carted them off to bed.

Concluding, it must not be thought that I wish to put forward extravagant claims as to the reasoning powers of the domestic hen. I shall be content if it be granted that she possesses *some* intelligence of her own apart from instinct.

The foregoing instances are not, I fear, very conclusive, but have been cited in the hopes of raising the burden of being so constantly referred to as "that senseless hen" from off the shoulders of poor Biddy.

An Egg Supper.

An egg supper was given by Mr. Enoch Hutton, F.Z.S., to the brethren of the St. Lawrence Lodge of Freemasons (No. 2330) at the Park Hotel, Pudsey, when, being somewhat of a novelty, it was thoroughly enjoyed by a numerous company. The eggs were cooked in various forms, as well as being served raw, and all dishes on the table were mainly composed of eggs, cakes, loaves, and trifles garnishing the board. The eggs of ducks, varying from black and green to pure white shells, with those of fowls varying from chocolate to the purest white, made a very pleasing show, while in size some unique specimens were used for garnishing; the largest (from a Minorca hen) weighed 4½ oz., and the smallest did not turn the scale at a quarter of an ounce.—*Stock-keeper* (1898).

WHO'S WHO IN THE POULTRY WORLD.

MR. ARTHUR LITTLE.

IN giving the portrait of the breeder named above, his recent departure from England to South Africa may be assumed to close the home chapter of his career, and it is unnecessary for us to deal with that part of his story, nor to tell how arduously and



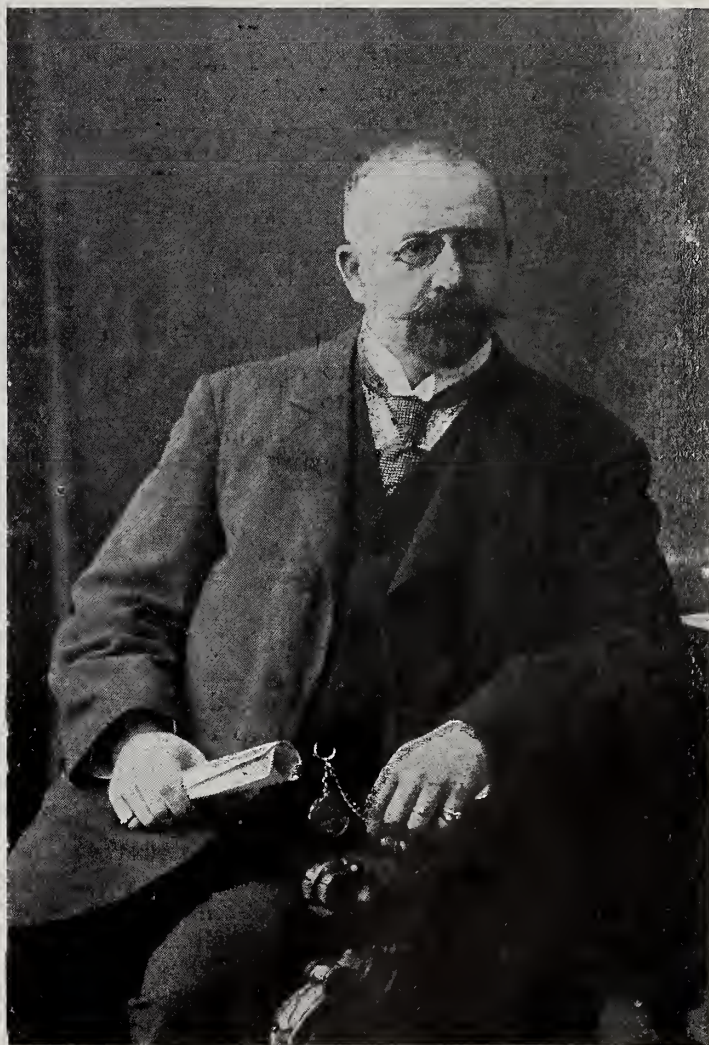
MR. ARTHUR LITTLE.

zealously and successfully he worked on behalf of the Croad Langshan, for these are well-known facts to breeders within the United Kingdom. We have now to regard more the newly-opened chapter of life. It is but a few months ago since he sailed to the Cape, where he was almost immediately appointed to manage the Cape Colony Laying Competition. So successful has he been in that work that he is now called to higher service as poultry instructor at the Grootfontein Agricultural College, in which position we feel confident he will exert a vast influence in Cape Colony. The needs and opportunities in South Africa are great indeed, and Mr. Little will be called upon to make history in the direction of developing the poultry resources of the country, in which direction his experience at home should be a great equipment, as well as his general knowledge of the subject he has to teach.

HERR HEINRICH KREUTZER.

AFTER an interregnum of nearly nine months' duration, the German and Austro-Hungarian Poultry Breeders' Club elected, at a general meeting, held at Hanover on October 21 last, a successor to its late President, H. du Roi, in the person of Herr Heinrich Kreutzer. Born at Frankfort, in 1865, Herr Kreutzer has from a very early age taken a keen interest in Fancy matters, Pigeons—in particular, Croppers—being his original hobby, and the apprenticeship served in youthful days has stood him in good stead during later years.

It must not be supposed, however, that he confined himself to the promotion of Columbarian interests, his election to the Presidency of the local Poultry and Bird Fanciers' Society, and subsequently of the Poultry and Rabbit Breeders' Club, clearly testifying



HERR HEINRICH KREUTZER.

to his catholicity in Fancy matters and many-sided abilities.

His qualities as leader and organiser were first put to a severe test in 1907, when—despite numerous obstacles—he succeeded in bringing about a union of three local Fanciers' Societies for the purpose of

common action, the first fruit of this combination being the Poultry Colony Wasserhof at Oberrad, near Frankfurt.

As member of the Committee of the German and Austro-Hungarian Poultry Breeders' Club, Herr Kreutzer has rendered valuable assistance at six National Shows, held under the Club's auspices at Frankfurt. All things considered, Herr Kreutzer is

thus well qualified for the post of President of that mighty organisation, holding sway over poultry lands:

"From the Etoch unto the Memel,
From the Oder to the Belt,"

and, if we may venture upon a more up-to-date version of the German folk-song, "From the Moselle to the Balkans," as particularly applicable to the case in point.

THE CRAZE FOR LOW PRICES.

By JOSEPH PETTIPHER.

THE modern craze for low-priced fowls is calculated to do a vast amount of harm to the general stock of the country. At the present time you can scarcely mention anything else in commerce, either live or dead, that is not on the up grade as regards prices. Take, for example, the foodstuffs we must perforce purchase for our birds. Everything is dearer, and yet one has only to pick up any one of the journals devoted to poultry, and note *stock birds* advertised as low in some instances as 2s. 6d. each, and in a multitude of cases only 3s. or 3s. 6d. is asked for birds described in varying terms as eminently suitable to breed from. Maybe some of these are misleading traps to catch the unwary, but this cannot be said generally if we look carefully over them.

And what is the result of this general craze for so-called cheap poultry? Why this dissemination throughout the country of a lot of cull specimens that ought never to be allowed to reproduce their species, but should find their way to the poulterer's stall as soon as they are large enough to kill? The increased interest in utility poultry-keeping and egg-production is doubtless a matter for sincere congratulation, but it is probably accountable for a great deal of this low-priced craze. "I only want them for utility" is a common expression with the buyer. Just so, but (and the "BUT" should be writ large in capitals) does he consider what it is he is likely to get for such prices in the way of really dependable stock birds? Does he think it possible that a breeder can make up breeding-pens of good quality, keep them to produce eggs for hatching, hatch those eggs at considerable cost and trouble, rear those chicks that are hatched, incur risk of loss by unfertiles and deaths of chickens, spend money on houses and labour, and the other hundred and one expenses consequent on chicken-raising, and then at, say, eight or nine months old sell him the selected specimens, such as are really the ones that should be bred from, whether his aim be fancy or utility, for 3s. or 4s. each? Why, they were worth probably anything from 2s. 6d. to 3s. 6d. at twelve to sixteen weeks old. And would that many more breeders of pure-bred fowls became more thoroughly utilitarians and sent to market a much greater percentage of their season's breeding, instead of merely "potting" just the draft cockerels and keeping the second-raters and all the pullets for sale for stock birds at these ridiculously low prices.

The trend for higher prices above-mentioned has

found its way to table poultry. During the past twelve months table fowls have on the whole fetched better prices than for a long time previously, and we believe breeders would be better off in the end if they applied the knife more heavily, and subsequently asked higher prices for those they reserved for sale for stock purposes, because it must be obvious that these very low-priced birds are sent out "to clear"—without any due regard to fitness for the purpose of reproducing suitable offspring, no matter whether it be layers or show birds that are in question. Equally as much care is needful in the selection of suitable breeders for producing good table fowls or heavy layers as for show specimens, and nine-tenths of the stuff that is sold for stock at prices ranging anywhere up to 7s. 6d. and even 10s. each ought to be killed and eaten months previously.

More particularly is this the case in the newer breeds that are the more popular at the present time. Take the Rhode Island Red as an example. There is just now a large number of people bent on giving it a trial. It claims, and we believe it is justified in claiming, to be a good table fowl and a good layer, but taking the question of its table fowl properties by way of argument, will not those properties in the offspring be influenced for better or worse by the way those qualities are present in the sire and dam? And is it likely that buyers will get the best in that direction in the low-priced specimens? Is it not the case in every breed that like produces like and the more perfect the parents in the points desired, the more likely are such points to be reproduced in the succeeding generations? I have said above that the Rhode Island is a breed of the hour, and one might consequently have concluded that with a big demand prices would accordingly rule high. And so I believe they do for really good quality breeding stock, but there are numbers being sold as low as any other kind. I have recently seen some of these, and I unhesitatingly state that I would not accept them at a gift if I were compelled to breed from them. Just recently a friend of mine who had a mind to try a pen of these birds motored over a considerable distance to look at some that were attractively advertised at a low price. He merely wanted a pure-bred pen of good quality to run around his place and supply the household needs, but he happened to have paid some intelligent interest to the breed, and though he went prepared with good money in his pocket, he returned without purchasing, "For," said he, "I wouldn't have had 'em at a

shilling each." Again, take the question of eggs for hatching. We find these now frequently offered at as low as 2s. 6d. a dozen, with unfertiles replaced.

Does the buyer think he is going to get good reliable quality stock at such prices? Presumably in most cases those who buy eggs for hatching are intending to select breeding stock from the resultant chickens. Do they expect such eggs are from dependably selected birds? And to take the other side. What profit is it to the vendor to sell at such prices? He cannot always ensure absolute fertility. Hatching eggs are mostly required at a time when table eggs fetch good prices, and by the time he has replaced clears and gone to the extra trouble and expense

A PARTIAL REMEDY FOR UNREST.

By "LANCASTER TYKE."

THE number of fowls in this country is not equal to an average of one bird per acre of the land under cultivation. All who have studied the economic aspect of poultry-keeping are agreed that this number might be enormously increased with great benefit to the nation. But there are differences of opinion as to what class of men can be expected to bring about the desired increase. Two writers who have given considerable attention to the subject—Mr. Edward Brown and "Home Counties"—are constantly urging the



TURKEYS LIVING UNDER NATURAL CONDITIONS.

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incident upon the safe packing and dispatch of sittings he would in all probability have been better off if he had sent them to market. Much the same may be said of the day-old chicken business. The seller cannot afford to put up really good-class breeding-pens and hatch out their eggs and sell the chickens at the prices we see quoted in many instances.

To sum up, the whole of the present craze for low-priced poultry in any form is a snare and a delusion. The prospective purchaser is misled by the tempting appearance of cheapness, which in the end is dear, and he had far better invest a little more money at the outset in order to purchase a dependable class of goods than be led away with the notion that he can get anywhere a pound's worth for half a crown.

farmers to deal with the problem by doubling or trebling their stock of poultry.

But is that the best way to accomplish the object in view? It might be if a greater production of eggs were the only matter to be concerned about. There is, however, another question, and one of vast national importance, that ought always to be considered in connection with what we are discussing. I refer to the prevalent unrest amongst the working-classes. This phenomenon is not by any means confined to Great Britain, although at the present moment it wears a more startling aspect here than elsewhere. It has made its appearance in all industrial countries, and is everywhere challenging the attention of the statesman and the man in the street.

POVERTY THE CAUSE.

The movement is in essence a revolt against poverty, and anything that tends, in whatever degree, to diminish the amount of undeserved poverty will, to the same extent, help to arrest the progress of the revolt. For that reason it would surely be a better policy to give badly-paid working men and women facilities for keeping poultry than to encourage comparatively wealthy farmers to add to their existing flocks.

The production of eggs is an occupation peculiarly suited to the needs and abilities of the labouring classes. It yields its maximum profits in return for the individual attention which they alone can give it. No other industry can be started with so small a capital, and none offers a more generous reward in proportion to the amount invested. So wide is the scope for its extension that it would to-morrow provide remunerative employment for a hundred thousand men and women—if so many were qualified for the work—and clear them out of the labour market.

ADDITIONAL INCOME.

No such sudden transformation is, however, either expected or desired. What ought to be done is to enable as many people as possible to obtain gardens of, say, an eighth of an acre up to an acre, so that they may keep from twenty to a hundred fowls, and thus acquire sufficient experience to justify them in demanding small holdings or allotments, varying in size up to a limit of five acres.

Land of average quality will carry poultry at the rate of a hundred birds per acre, and each score of laying hens will, under proper treatment, leave a net profit of at least £5 a year. Most working men could attend to a flock of fifty without detriment to their ordinary day's labour and with distinct advantage to their own health. There is ample room in this country for half a million such flocks, and they would mean to their owners virtually an increase of five shilling a week in their wages.

A SUPPLEMENT TO WAGES.

I do not want anybody to come to the conclusion that this suggestion is intended as a substitute for the advances that are everywhere being demanded by the wage-earners. Whatever increases they may obtain for their normal day's toil, they can make good use of any additional income they may derive from poultry-keeping. But during the last few weeks employers have been confidently asserting that certain departments of industry are incapable of bearing any increase in the wage bill. If that is really the case, it is the duty of such employers to help their employees to supplement their inadequate pay in other ways. And at present there seems to be no simpler or more effective means of doing that than the provision of allotments and small holdings, including any necessary cottages for the purpose of poultry-keeping.

DORMANT ACTS OF PARLIAMENT.

In the combined provisions of the Acts relating to Small Holdings, Housing, and Rural Development we already possess an instrument of incalculable potency for the work in question. But, unfortunately, the first two of those measures are being allowed to remain largely inoperative, while the third is being used for all kinds of purposes excepting the most urgent and

important one to which it could be applied—i.e., the benefit of the working-classes. There are many people who see in the prevailing discontent a menace to the stability of the State. They might usefully spend a few hours in studying the far-reaching possibilities of the legislation I have mentioned, and then lend a helping hand to those who are endeavouring to convert those possibilities into actual achievements. In that way they would be doing something to prevent the ship of society from capsizing.

Nobody who realises the intensity of feeling beneath the present industrial unrest will cherish the delusion that it can be allayed by empty words. A substantial improvement in the condition of the masses is inevitable. If that cannot be brought about by higher wages other means will have to be devised. And it lies with those who reject the idea of increased wages to suggest what those other means shall be.—*Blackburn Telegraph*.

A Mysterious Poultry Killer.

The *Melbourne Leader* states that within a few weeks upwards of a thousand fowls have been killed in the Hawthorn district of Victoria. Every effort to discover the perpetrators has failed. A constable who was on the watch states that a little white animal ran past him, followed by a black one, but he could not see what these were. The dead birds were found with a small ragged hole in the neck, evidently made by the teeth of some animal, but not otherwise injured.

An Army of Turkeys.

A Philadelphia journal calculates that if all the turkeys taken into that market at Christmas were marched in one cavalcade, leaving three feet for each one, three abreast, they would have made a line twenty-two miles long.

The Storrs Laying Competition.

The New York correspondent of the *Standard* says: "Patriotic American poultry fanciers are chagrined by the inability of local hens to maintain the standard of egg-production set by five English hens entered in the international egg-laying contest at the State Agricultural College at Storrs, Connecticut. The competition has been going on since November 1, and to the end of March the five British fowls have laid 495 eggs, against 431 laid by the most prolific American quintet. There are 98 entries of five hens each, representing England, Canada, and the United States. They represent twenty-three breeds, and the contest is being watched closely by poultry experts because it is expected to settle many disputed points concerning the best laying fowls."

Egg Societies in France.

Whilst General Agricultural Co-operative Societies have grown rapidly in France, those concerned with the collection and sale of eggs are very few in number, doubtless owing to the large demand and good prices realised. An account of two has been published, both in the south-western departments, specially associated with Co-operative Dairies. At these the returns do not appear to be high, as the top price in November is only 1.14 francs per dozen—that is, little more than 1d. each egg.

A RECORD-BREAKING HEN.

By JAMES E. RICE, Professor of Poultry Husbandry at Cornell University, and
CLARENCE A. ROGERS, Assistant Professor of Poultry Husbandry at Cornell
University (U.S.A.).

A PHENOMENAL hen is "Lady Cornell" (No. 3211), bred and owned by the Cornell Poultry Department. In her first year of laying this little Single-combed White Leghorn, weighing 3.21lb., produced 257 eggs averaging 1.83oz. each and having a total weight of 29½lb., or 9.2lb. of eggs for each pound of live weight. This is a remarkable performance from a physiological standpoint. It is



"LADY CORNELL."

the highest official experiment station record published in this country.

Dr. W. H. Jordan, of the New York State Experiment Station at Geneva, has compared a Leghorn fowl that weighs 3½lb. and lays 200 eggs, weighing 25lb., with a Jersey cow that weighs 1,000lb. and gives, in a year, 7,000lb. of milk containing 14 per cent. of solids. He states that "if you take the dry matter of the hen and compare it with the dry matter in the eggs she lays in a year, there will be five and one-half times as much dry matter in the eggs as in her whole body. The weight of the dry matter in the cow's body to the weight of the dry matter in the milk will be as 1 to 2.9. In other words, based upon the dry matter, the hen does twice as well as the cow. I suspect the hen is the most efficient transformer of raw material into a finished product that there is on the farm. Her physiological activity is something remarkable. So in that particular the hen stands in a class by herself."

"Lady Cornell," who it is estimated, has in her

body 1.414lb. dry matter, consumed in one year 83.1lb. of dry matter and produced eggs containing 10.118lb. of dry matter, or 7.15lb. for each pound of dry matter in her body.

The eggs sold on the Ithaca market for \$7.43. It is estimated that she ate 110lb. of food, costing \$1.66. The financial statement for the year is estimated as follows:

	Debit.	Credit.
Food consumed, 110lb.	\$1.66	
Labour ... ..	.75	
Interest on investment ... ..	.25	
Value of eggs laid, 257 at \$.35 per dozen		\$7.43
73lb. manure ... ..		.29
	<hr/> \$2.66	<hr/> \$7.72
Net profit, not counting depreciation in value of hen		\$5.06

Perhaps still more remarkable is the fact that after her first year's heavy production this hen has laid 189 eggs weighing 22lb., and is still laying with thirty-two days before the close of her second year. This makes a total yield of 446 eggs in less than two years.

When we realise that flocks of good hens usually lay on an average about eleven dozens (132) eggs each and rarely exceed twelve dozens (144) eggs per hen, and that the average farm flock probably lays less than 100 eggs per hen per year, the unusual performance of "Lady Cornell" is emphasised.

Only twelve eggs behind "Lady Cornell" is "Madame Cornell" (No. 3352), who produced 245 eggs weighing 30.6lb. in her first year of laying and has laid, thus far, in her second year, 130 eggs weighing 16.2lb., or a total of 375 eggs in twenty-seven days less than two years.

In nearly the same class are others of the same age and variety. Fifteen of the highest producers, including "Lady Cornell" and "Madame Cornell," laid on an average 236 eggs each. One flock of twelve pullets averaged 182 eggs each.

These high records are due to a combination of circumstances: (1) a good laying strain; (2) careful selection of breeders for constitutional vigour; (3) a suitable ration; (4) fresh air house conditions; (5) care and skill in feeding and management.

For the latter the Department is indebted to Mr. W. S. Lyon, assistant in charge of the investigation pens.

The regular "Cornell ration" was fed as follows:

The following whole grain mixture is fed morning and afternoon in a straw litter:

By WEIGHT.	By MEASURE.
Winter.	Winter.
60lb. wheat	32 quarts wheat
60lb. corn	36 .. corn
30lb. oats	30 .. oats
30lb. buckwheat	20 .. buckwheat

By WEIGHT. Summer.	By MEASURE. Summer.
60lb. wheat	32 quarts wheat
60lb. corn	36 " corn
30lb. oats	30 " oats

The following mash is fed dry in a hopper kept open during the afternoon only:

By WEIGHT. Winter and Summer.	By MEASURE. Winter and Summer.
60lb. corn meal	57 quarts corn meal
60lb. wheat middlings	71 " wheat middlings
30lb. wheat bran	57 " wheat bran
10lb. alfalfa meal	20 " alfalfa meal
10lb. oil meal	8 " oil meal
50lb. beef scrap	43 " beef scrap
1lb. salt	$\frac{1}{2}$ " salt

The fowls should eat about one-half as much mash



The eggs she laid in one year—257, weighing 29.5lb.

by weight as whole grain. Regulate the proportion of grain and ground feed by giving a light feeding of grain in the morning and about all they will consume

at the afternoon feeding (in time to find grain before dark). In the case of pullets or fowls in heavy laying, restrict both night and morning feeding to induce heavy eating of dry mash, especially in the case of hens. This ration should be supplemented with beets, cabbage, sprouted oats, green clover or other succulent foods, unless running on grass covered range. Grit, cracked oyster shell, granulated bone and charcoal should be accessible at all times.

The record of the hen, "Lady Cornell," furnishes an instructive though startling evidence of human triumph in handling the forces of nature. Witness the gradual evolution of the domestic fowl through centuries from several species of wild jungle fowl to be found even now in India and Ceylon. These primitive fowl, like partridges, lay less than two dozens of eggs per year. "Lady Cornell" serves to point out the way to higher and still higher production. She is simply one of the advance guards in the march of the great army of hens in their upward development of domestication—hen civilisation—by the guiding hand of man.

Phenomenal performance in egg production, like performance in all animal production, serves to point out the *possible* rather than the *probable* yield. There is a sharp distinction between the two. Commercially we must reckon with the high average rather than with the exceptional individual.

A phenomenal individual among domesticated animals is to the breed what a genius is to the human race, an exception, but one to be prized and treasured as indicating the "high water mark" in the rising tide in the evolution of the species.

"Lady Cornell" is, literally and figuratively speaking, a "rara avis"; she is a hen genius.

Co-operation in New South Wales.

The Poultry Farmers' Co-operative Society of this colony report a turnover last year of £11,000, as against £7,160 in 1910, and a net profit of £130. This is entirely run in the interests of producers who form the shareholders.



The food she ate in one year—110lb

FANCIERS AND FANCY MATTERS.

By WILLIAM W. BROOMHEAD.

Death of Mr. Harry Kitchen—Death of the Rev. Fred. Pickup—The Late Mr. J. N. Harrison—A New Secretary for Birkenhead—Two More Resignations—A Welcome Revival—Brown Leghorns in Scotland—Ros-combed Black Minorcas—Pekin Bantams' Tails—The Black Wyandotte—The All-Round Judge.

DEATH OF MR. HARRY KITCHEN.

I have to record with regret the death, towards the end of March, of Mr. Harry Kitchen, at the comparatively early age of forty-six. The deceased was well known in the Fancy, since for ten years he had acted as secretary of Leeds Smithfield Show. At one time he was a familiar figure at the agricultural shows up and down the country when he used to exhibit pigeons, but of recent years he had gone in almost solely for the exhibition of Oriental Frills, his stud being second to none in this country, and of which variety he was a most capable judge. Although of a somewhat brusque manner, and particularly to exhibitors at Leeds who were anxious to catch the early train home with their birds, the late Mr. Kitchen was a good type of Englishman, of fine physique, and by most regarded with admiration. He was a prominent Freemason, and a Grand Deacon of the Allerton Lodge, Leeds, and his vocation was that of an estate agent. To the late Mr. Kitchen's widow and two young children the RECORD tenders expressions of sincere sympathy in the great loss they have sustained.

DEATH OF THE REV. FRED. PICKUP.

On Lady Day there passed away at Hale Magna, Lincolnshire, at the age of fifty-eight, the Rev. Frederick Pickup, one of our oldest breeders of Brahmas. The deceased was best known in the Fancy as a successful breeder and exhibitor of Lights, which variety he had kept for more than twenty years. He frequently exhibited his birds at the chief events of the season, but during the past four years or so he gained his greatest successes, his cocks heading the Light Brahma classes in the two past show seasons. At the late Dairy he won first with a pullet, and the bird was also awarded the B. D. F. A. medal for the best Brahma. Other breeds Mr. Pickup kept were Dark Brahmas, Partridge Cochins, Plymouth Rocks, and Andalusians, while he was always a great admirer of bantams. The reverend gentleman made great strides with his poultry since his removal to Lincolnshire some five years ago, as he had an ideal place for heavy breeds, and had he been spared, there is little question that farther honours would have been gained by his stud. Mr. Pickup leaves a widow, one son, Mr. F. A. Pickup, mathematical master at Newbury School, Berkshire, and four daughters.

THE LATE MR. J. N. HARRISON.

Death has indeed been busy in the ranks of the Fancy of late. Just as the RECORD goes to press with these notes I hear of the demise of Mr. James N. Harrison, of Belper, Derbyshire, in his seventy-first year. As an all-round judge—one who would adjudicate on all birds and animals generally included under the head

of smaller live stock—he was well known, and particularly in Wales. Many of us will miss him. He was indeed an excellent example to the rising generation of judges, going about his work in a quiet and methodical manner.

A NEW SECRETARY FOR BIRKENHEAD.

The council of the Wirral and Birkenhead Agricultural Society has appointed Mr. H. C. Ardron, late secretary to the Leicestershire Agricultural Society, to succeed Mr. Arthur H. Edwardson as secretary. The news that Mr. Edwardson has now severed his connection with the society will be received with regret by subscribers and supporters who have visited the show year after year. His association with the society dates back twenty-five years, and he has witnessed the Wirral and Birkenhead Show increase from an event of comparatively local interest to a fixture of first-class importance. Mr. Edwardson's services to the council have been of the most loyal character, while his advice proved very valuable in the unfortunate times through which the society passed, and particularly after the calamity that befell the show during the storm in the Bidston Hill days. With others, he was instrumental in securing the present excellent site for the annual show at Bebington, and he leaves the society when prosperity is being experienced. As a secretary he is well known throughout the Fancy as "one of the best," while he was especially courteous to members of the Press, and never hesitated to give them every assistance in the discharge of their duties. The council of the society decided, in view of Mr. Edwardson's long and faithful services, to make him an honorary life member, an honour which will be appreciated by the recipient and his friends.

TWO MORE RESIGNATIONS.

Those readers of THE ILLUSTRATED POULTRY RECORD who are interested in Scottish shows will hear with regret that, owing to the state of his health, Mr. James Macdonald, F.R.S.E., has had to resign the secretaryship of the Highland and Agricultural Society of Scotland, a position which he has held with conspicuous success for nearly twenty years, he having been appointed in 1892 in succession to Mr. F. N. Menzies. He had a serious illness two years ago, but had almost recovered his usual good health; he again broke down at the end of last year, and although his health has improved he deemed it advisable not to resume his duties. As a journalist, Mr. Macdonald is well known, he having been editor at various times of *The Irish Farmers' Gazette*, *The Live Stock Journal*, and *The Farming World*. Apparently the Highland society is to have no difficulty in appointing a new secretary, since there are over fifty applicants for the place. The directors have selected seven, among whom is Mr. John Howie, Secretary of the Ayrshire Agricultural Association. It may be remarked *en passant* that the Highland show is to be held in Kinloss Park, Cupar, Fife, on July 9, 10, 11, and 12, with Messrs H. Gilbert and William Binnie as the poultry judges. Another resignation I have to announce is that of Provost Husband, from the offices of secretary and treasurer of the Western District of Fife Agricultural Society, which holds its shows at Dunfermline on the last Saturday in June. Mr. Husband has now managed

this fixture with great success for the past twenty-six years, and it will be a difficult matter to find an official as popular and as able as he. Mr. Stobo, the National Bank Agent, Dunfermline, has consented to take up the secretarial reins in the meantime.

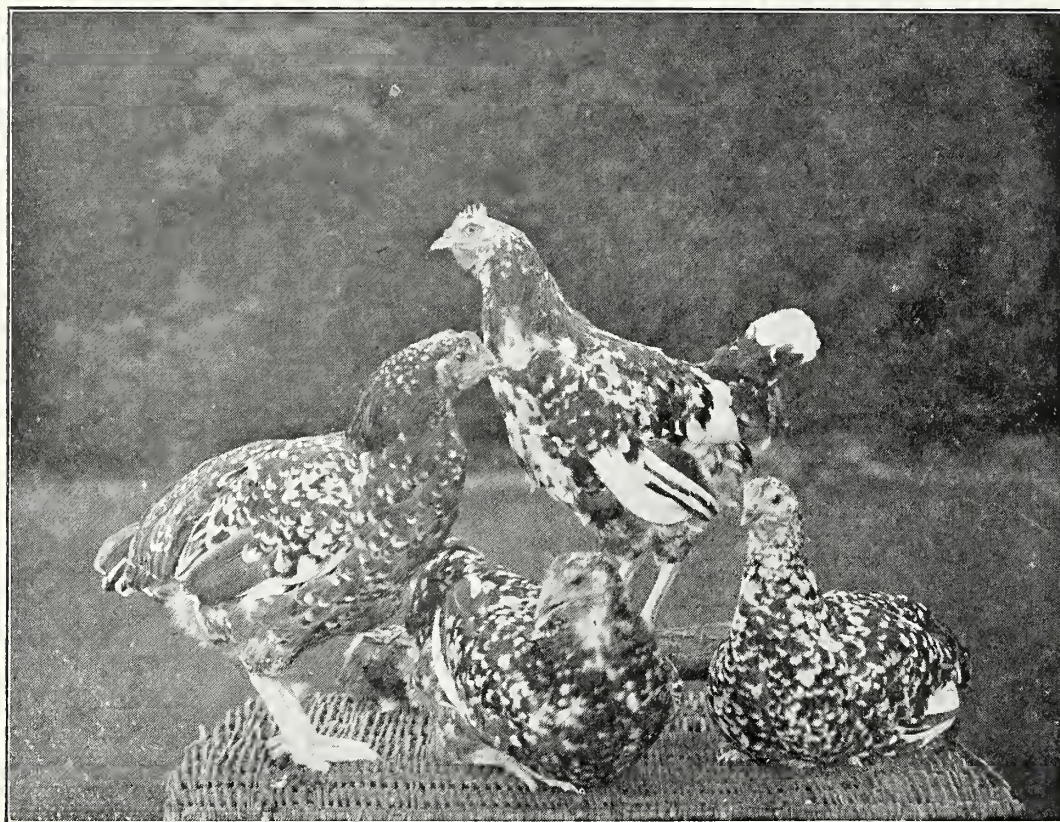
A WELCOME REVIVAL.

I am very pleased to hear of the revival of the Southend Fanciers' Association. Time was when the annual shows held under its auspices were among the most successful gatherings of their kind in the South of England, but owing to certain matters, the society has not had an exhibition since 1910. At its last fixture, in the Kursaal that year, it appears some difficulty arose over a certain section, and, as the almost inevitable result of a dispute, a number of the members resigned. Last year, owing to the illness of their secretary (Mr. Jones), they were unable to infuse enthusiasm among the remaining members. Efforts were made to resuscitate the show, but on account of the inability of the promoters to secure a suitable room the attempt proved abortive. Nevertheless, an enthusiastic spirit existing among a number of the fanciers in Southend, it was determined not to let the shows die right out. The association, although suspended for a time, was really in a prosperous condition, since in addition to possessing four challenge cups, it had a balance at the bank of something like £5.

Foxall as secretary—Mr. Jones being unable to hold office on account of continued ill-health—and Mr. Keer as treasurer, but the members have acted wisely in retaining Mr. G. Larman as chairman of the society, since no one could have done more than he for fanciers in the district. The Southend Fanciers' Association now caters for poultry, pigeons, rabbits, and dogs, and it behoves fanciers of those branches residing within a radius of twenty miles of Southend Post Office to join without delay, and thus ensure a grand exhibition for 1912.

BROWN LEGHORNS IN SCOTLAND.

I learn that Mrs. Smith, of Cattofield House, Aberdeen, has purchased the entire stock of Brown Leghorns owned by Mr. William Keys, late of Kintore. The value of the strain can be imagined when it is stated that it has won at the Palace, the Dairy, Birmingham, and Specialist Leghorn Club Shows, both in England and in Scotland. Mr. Keys's birds were awarded first and second prizes at the Scottish Leghorn Club Show in 1896, and in the following years they secured all three honours, while in 1898 they repeated the previous year's successes, taking first, second, and third prizes, and winning outright the eight-guinea challenge cup for the best Leghorn pullet. On this cup being replaced the same strain won it in each of three successive years, the awards in two of the years



A PEN OF R D SUSSEX BELONGING TO MR. J. STEPHEN HICKS

Those who have the society's welfare at heart have been "on the move" this season. Already some well-attended meetings have been held, while the cage-bird section having been eliminated—since there is a cage-bird society in the town—one has been put on for dogs. New officers have been elected in Mr.

being first, second and third prizes. This second cup Mr. Keys presented to the club, and since that date he has not competed at any of the club's shows. Mrs. Smith has two excellent breeding-pens of Brown Leghorns, and it is her intention to popularise the variety in the North.

ROSE-COMBED BLACK MINORCAS.

That the rose-combed Black Minorca is "going strong" in America there can be little doubt, and from reports received, it appears to be keeping up its reputation as a "great" fowl. At the Scranton (Pa.) Show this year the class for the sub-variety had an entry of 124, and was the largest class in the exhibition, there being thirteen different yards represented. The International Rose-comb Black Minorca Club (of which Mr. Lloyd C. Mishler, of North Manchester, Indiana, U.S.A., is secretary and treasurer) means to keep it well to the front. It has just issued a fifty-two-page catalogue, giving articles on feeding and caring for Black Minorcas, and explaining the different points about this breed. "No one interested in Minorcas," says Mr. Mishler, "or who is undecided as to what breed to start with, should be without this book." It will be sent free to anyone who will notify the secretary that he wants a copy of the I. R.-c. B. M. C. catalogue. I hear that in America the rose-combed Blacks are fast gaining on their single-combed relatives, and rival them in size, shape, and fancy points in the show pen, while in the northern climates they far excel in the breeders' yards as egg-producers. This latter should be encouraging, by the way, to those fanciers over here who are breeding rose-combed Plymouth Rocks! As to the Black Minorca in this country, I hear high testimony on all sides regarding the rose-comb as a layer, and particularly during the winter months. At the shows last season there were three or four really excellent cockerels and pullets on view, so much so that I will be surprised if the rose-combed Black does not make a fine display at the classic events of 1912. The hon. secretary of "our" club is Mr. R. W. Webster, Kiora, Maidenhead, and he will be pleased to supply particulars of membership to anyone applying to him.

PEKIN BANTAMS' TAILS.

I see that the question of tail pulling in Pekin bantams has come to the front once more, and in some notes he recently contributed to "Poultry," Mr. J. F. Entwisle deals with the subject. He goes very fully into the history of the Pekin or Cochin bantam, and shows that in producing the different varieties, birds with long hard tails—Booted, among them—had to be introduced. But rather than continue in-breeding from those birds with the least defect in this respect, several fanciers purchased otherwise good specimens and dyed the tail feathers; then they carefully regulated them so that the new tail should grow the desired length by the time of the show at which it was intended the bird should compete. This, says Mr. Entwisle, was the commencement of "tail-pulling." Gradually, however, it developed from showing specimens with a growing tail until a tail of any description was dispensed with. To such an extent did this mania—for it was nothing else—exist with some judges, that "on one occasion," to quote the authority mentioned above, "we showed a partridge hen which had then won upwards of sixty first and second prizes, against a very moderate black with a drawn tail, and we had to 'go under.' In the midst of a heated argument with that day's judge, we took the hen from the pen, drew her tail, and replaced her. We were told then that had the bird been shown in that condition she would

have won!" Personally, I can see no beauty in this tail pulling. Admittedly it is apt to make the birds appear smaller, but in my opinion it removes from the cock that jaunty appearance so essential in a bantam, and a Cochin bantam particularly. I have bred Buffs, from headquarters, and no bird pleased me better than the cock when fully furnished, his tail being such that made Orpingtonians absolutely "green with envy." No; leave the tails in and let the birds be shown as Nature makes them. The Cochin bantam is a most charming variety, and one which the novice can breed with some hope of success. The hens and pullets are very good layers if properly fed, and the eggs are such that delight children, one being ample for a youngster's breakfast.

THE BLACK WYANDOTTE.

Is the Black Wyandotte a decadent variety? It is a question. The edict has gone forth from "one who knows." The Rev. T. W. Sturges, after having given it a thorough trial, is getting "out" of it, since, says that recognised authority, "it is the most uncertain breed under the sun." And also, "The demand has ceased." Is the reverend gentleman looking for trouble? Mayhap readers of the RECORD will have something to say on the subject, hence I will leave it to those who have the welfare of the Black Wyandotte in their keeping to discuss the question, merely remarking that I have bred Blacks and that the percentage of "potters" secured was greatly in excess of decent specimens. However, let those speak who can.

THE ALL-ROUND JUDGE.

In a recent controversy appearing in *Poultry* certain correspondents—and among them one or two who should know better—have been airing their views of the all-round judge; to such an extent, in fact, that a stranger might be led to imagine that in the Fancy the most incompetent men are asked or appointed to place the cards. It is time, therefore, that one of the much-abused took up the cudgels. I presume, of course, that by "all-round" judge is meant one capable of judging any variety of poultry, and not one anxious to "sort them out" in anything from an insect to an elephant. Dealing with one question, that of size, some correspondents have asserted, although, maybe, not in as many words, that the all-round judge alone is responsible for the increase in the size of some varieties of fowl which are now being shown. If they had only acted on the old advice, "Look before you leap," they would have seen how erroneous were these statements, since if they will but go carefully into matters they will see that in most instances the size craze was introduced and kept going by the very men who figure among the specialist judges. Who were the first fanciers to exhibit and afterwards to judge the ungainly so-called Modern Leghorn? Likewise the big "Cochiny" Orpingtons, the half-bred Langshan-Minorcas, the overgrown—according to some—Wyandottes, the great feathery Cochins and Brahmas, and so on, ad infinitum? In the words of the American, "nuf sed!" Those who complain of the all-round poultry judge making size his fetish should make certain of their statements ere putting them into cold print.

BIRD-CAGE POULTRY-KEEPING.

By J. GODWIN EDWARDS.

THIS was the subject of an interesting article in the December issue of THE ILLUSTRATED POULTRY RECORD, in which the writer very ably pointed out the various phases of intensive poultry culture, more particularly with reference to keeping adult birds in confined spaces for laying purposes. He touched lightly on rearing birds in fireless brooders as compared with artificial heat, but left the table-poultry side untouched.

Having had the opportunity of observing this intensive system as carried out with the City and progressive plant at the Crystal Palace during the Festival of Empire last summer, I will endeavour to answer the points raised.

(1) Scrupulous cleanliness was evident.

(2) The loose sand and dry earth prevented disease and furnished means for exercise, thus keeping the birds healthy and preventing any tendency to over-fatness.

(3) Hopper-fed bran was eaten with relish and in astonishing quantity. Experience has proved that the addition of cooked cereals gives best results.

(4) The use of sprouted oats appeared to me to be the key-note as far as feeding was concerned. This provides the necessary green food in the most appetising form, and, I venture to think, is more beneficial than any other kind of green-food. Here we have the most perfect grain converted by the action of sprouting into a bulky mass of easily-digested food, the value of which it is difficult to estimate. Its action on the blood by keeping it cool must be very considerable, apart from the general feeding value of oats themselves.

At the end of last summer Mr. Meech paid a flying visit to America to see the latest and most down-to-date methods of keeping fowls in a confined space. On his return, he at once did away with the double-decker, substituting a single-floor house of slightly larger dimensions. Of these he has over sixty at present in his City plant at the Palace. I was there a few days ago, and found they each contained five hens and a male bird, and all appeared in excellent condition.

As to the scope and limitations of the bird-cage system experience only can prove. It is said that one man can look after 100 of the "cages"—feeding, watering, keeping clean, and collecting the eggs, besides seeing to the sprouting of the oats. He would thus have 500 hens to attend to. As to how many eggs they would lay, this would naturally depend upon the breed and strain of the birds. The Orpingtons and Wyandottes appear to be the most suitable breeds; those at the City plant at the Palace are all either White or Buff Orpingtons.

I inquired of a friend on Mark Lane, who runs a poultry-farm in Sussex, and is experimenting with the intensive system, how the plan answered. He said that the results had far exceeded his expectations. He has five White Orpingtons in a house made on the Philo principle, and those five hens laid on an average 21 eggs a week during the month of January, as compared with 14 and 15 eggs from 7 birds in a house in a field. He has 47 chickens in a fireless

brooder doing as well as possible. As to fertility, those who have adopted the intensive principle say that eggs from hens in these small coops are equally fertile, if not more so, than those from hens that have their liberty and a full range.

Experience will prove whether birds will be healthier and more profitable if allowed to follow the usual course than when confined in small houses. There are now several plants in this country, so we shall soon know what can be done.

Great developments are taking place in the rearing of chickens for the table. During the last three years on the Hon. Mrs. Massey's farm at Cahir, co. Tipperary, experiments have been made by Mr. F. Hesketh, who has had a life experience in chicken-rearing. As the chickens come from the incubators they are placed in foster-mothers 12ft. long by 3ft. high and 3ft. deep, divided into three compartments, two 3ft. square and the third 6ft. by 3ft. No. 1 is fitted with a hurricane lamp, which gives warmth to the chickens, and tends to keep the litter dry. No. 2 is the day nursery, where the chicks are fed; while No. 3 is an open run, and forms the "play-ground." The chickens remain in the foster-mother until they are six and a half weeks old; they are then placed in a cold-brooder house, 60ft. long by 27ft. wide, with an alley-way down the centre, on each side of which are ten runs 12ft. by 6ft., each of which accommodates 50 chickens for a further six and a half weeks, so that the brooder-house, when full, will contain 1,000 chickens. At the end of thirteen weeks these are ready for killing, averaging 3½lbs. each and worth 8d. to 9d. per pound, say, 2s. 6d. each, having cost at the outside 1s. 6d. to 2s., leaving a clear profit of 6d. per bird.

An acre of ground will accommodate 8 rows of 15 each of the foster-mothers, or 120 in all, and 6 cold-brooder houses, so that when running at full capacity there would be 12,000 chickens. Six thousand of those would be ready for killing every six and a half weeks, say, eight times in the course of a year, which would give 48,000 annually. Allowing 8,000 for accidents and mortality would leave 40,000 a year, which at 6d. per head would give an income of £1,000 a year.

While these experiments were being carried on in Ireland, Mr. R. E. Widdows, of the Shirley Poultry Farm, was making trials on somewhat similar lines with about the same results. His cold-brooder houses were slightly larger, being 33ft. wide instead of 27ft. This gave the runs an extra three feet, being fifteen instead of twelve. Mr. Widdows placed his foster-mothers in the runs instead of outside, so it would be necessary to have twelve cold-brooder houses to the acre. There is ample room for this, and still leaves plenty of space to grow green food and sprout oats.

A gentleman at Sudbury, in Suffolk, is experimenting on these lines. He has had a cold-brooder house made 30ft. long and 30ft. wide, with five divisions on each side, and the alley-way so that the house has accommodation for 500 chickens. The house is 4ft. 6in. to the eaves, and 7ft. 6in. to the ridge, each run having a window, which can be opened or taken right away, leaving wire-netting. There are two windows at each end and two windows in the roof, so there is plenty of light and ventilation. The floor of the brooder-house is earth with a good thickness of peat-moss and chaff.

AN INTERESTING FOOD BILL.

THE queerest commissariat list ever published is included in the annual report of the Zoological Society. Over £5,274 was spent last year in food for the collection of animals which drew 892,622 visitors to the Zoo. Following are some foodstuffs purchased :

Tares	13,584 bndls.	Dates	3,666lb.
Maize	376 bshs.	Lettuce	11,572
Canary seed	164 bshs.	Carrots	3,223lb
Herrings	16,965lb.	Potatoes	20,496lb.
Whiting	61,584lb.	Onions	190lb.
Shrimps	1,585 pints.	Biscuits	272cwt.
Horses	266, weighing ing 133 tons.	Bread	7,020 qrtns
Goats	175, weighing ing 831st.	Eggs	36,400
Condensed milk	4,380 tins	Fowls' heads	50,544
New milk	12,688 pints	Sugar	473lb.
Monkey nuts	44½ cwt.	Rabbits	682
Melons	3	Guinea Pigs	24
Bananas	113,829	Pigeons	510
Grapes	4,268½lb.	Rats	3,866
Oranges	11,982	Mice	19,031
		Ducks	22
		Sparrows	7,671

The report includes the interesting announcement that the year was unusually successful in regard to breeding. The income for the year was £36,732 18s. 5d., and the balance over ordinary expenditure was £4,598 14s. 9d.

Canadian Importation of Eggs.

Reports state that Canada imported last year from the United States 159,000,000 eggs, of the value of £540,000. At one time it was said that the Dominion intended to feed the Empire, whereas she does not supply her own requirements.

An Actress's Poultry Farm.

Miss May Irwin, a popular American actress, has a considerable estate in the Thousand Islands, where she specialises in Black Orpingtons, with which she has been most successful as an exhibitor. The whole enterprise has arisen from a present five years ago of a setting of eggs.

A Famine in Table Poultry.

The rapid displacement of other breeds and crosses therefrom in favour of the popular Leghorn threatens a table-poultry famine in New Zealand. On all sides the scarcity is very great, so much so that as much as 7s. to 8s. per pair has been paid this season for dead birds. In all such questions specialisation has its dangers.

A Good Retort.

The *Canadian Poultry Review* tells how that President Creelman, of Ontario Agricultural College, Guelph, was recently speaking to the Literary Society at McMaster University, Toronto, and when he appeared on the platform being greeted with a series of cock-a-doodle-does and other farmyard noises. Mr. Creelman began his speech briskly as follows: "Ladies and gentlemen and old roosters in the gallery: I find I am not so far removed from the farmyards of Ontario as I expected to be upon entering these halls." This made the President of the famous College solid with the McMaster boys at once.

HATCHING AND REARING TURKEYS

By FRED. W. PARTON

(The University, Leeds).

IT is during the first few weeks in the life of turkey chickens that they require the greatest care and attention. Once succeed in getting them through the critical period of "shooting the red," and they will, under favourable conditions, go ahead and give very little further trouble. I do not mean that care should cease at this period, because an eye must always be kept upon them to see that their early progress is maintained.

When turkey chickens are hatched, which is usually accomplished by hens, they should be left in the nest until they are perfectly dry, say, from twelve to sixteen hours after the first chicken has made its appearance. They should then be removed to a coop sufficiently large to allow of freedom of action for the hen and prevent danger to the chickens from being



A CAPITAL WAY OF SETTING A TURKEY HEN.
[Copyright.]

crushed. Twelve or fourteen hours after their occupation of the coop they should partake of their first feed, which may consist of hard-boiled eggs, finely chopped, mixed with biscuit meal, and moistened with milk. This ration should continue for five or six days. After this, oatmeal made with milk into stiff porridge makes an excellent and nourishing diet. It is found that upon this food a large frame may be built up, which is of the utmost importance with turkeys, as upon this largely depends their future profit. The price of turkeys for the Christmas markets is governed by size, since large birds command considerably higher prices than do the smaller specimens. Quality is, of course, an important factor. At the same time, if both good quality and large size can be combined, then the ideal is attained. The porridge diet may be varied by boiled rice, barley meal, and fine sharps. From the commencement they should have a plentiful supply of vegetables, either cooked and mixed in their soft food or given raw. Meat, in one form or another, should also be provided.

There is one item that is often neglected—namely,

the importance of feeding the young ones at regular and frequent intervals. Turkeys have remarkably small crops, consequently they are easily satisfied for the time being, but they do not obtain the necessary amount of food to last for any great length of time. Unless, therefore, they are fed at short intervals, they suffer considerably from too long fasting, and are tempted to overfeed when the chance presents itself.

The rearing of turkeys is work that should only be attempted if all the conditions are suitable. In the first place, it is the farmer who has plenty of land at his command who should embark on this branch of poultry-keeping, since turkeys must on no account be overcrowded. Not only so, but the land relegated to them must be dry. We have known turkeys reared under most unsuitable conditions; they have been placed on damp soil, and overcrowded on both land and houses, and yet, according to the owner's accounts, the very best results have been obtained. Very sensational stories are told of marvellous achievements both in the rearing of ordinary fowls and of the raising of turkeys, some of which are more or less true; at the same time, such wonderful performances must not be taken as a guide to, or proof of, what others may accomplish. It may, therefore, be stated that plenty of space and a dry soil are the cardinal requirements in turkey rearing.

When the chicks are brooded by a turkey hen which has been accustomed to roost in the trees, the young ones quite naturally follow her example. Under these conditions the birds are brought up in a very hardy fashion, and are less prone to the diseases from which turkeys commonly suffer. For the rearing of stock birds there are many advantages in allowing them to follow this nature method of roosting. Size and sound constitution are the chief points to aim for in the breeding stock, and these are more readily secured by the healthy condition of birds accustomed to sleeping in the open-air. Objection is sometimes raised against allowing turkeys to roost in the trees, the reason being that when so treated they will never afterwards take to sleeping in an ordinary poultry-house, and consequently when the time arrives for them to undergo the "finishing off" process for Christmas consumption, they cannot bear the confinement which is so necessary at this time.

When turkey chicks are reared by the ordinary farmyard hen, she will show signs of restlessness when the young ones are about seven or eight weeks old, and she will in all probability desert them, and return to the laying house, or, if a house is not accessible, she will remain in the coop along with her charges, although she has ceased to care for and attend to their wants. When this is noticed the chicks want special care, since they have not attained to an age when they are sufficiently advanced to take entire care of themselves, and when they are deprived of the attentions of the hen, who hitherto has foraged for much of the young ones' food, and has protected them from harm, it may be necessary to remove the chickens to a poultry-house, since coops are somewhat cramped in size for a good batch of growing turkeys, and they must not be hampered in this direction at this most critical period in their growth. The most suitable form of house for turkeys is one with an open front, thus ensuring plenty of fresh air, which is so very necessary.

THE ROTATION OF PRODUCTION.

By J. W. HURST.

FOWLS.

Producers of table chickens are now right in the middle of their best season for the disposal of young birds for fattening, the value being as a rule at its highest from about the middle of April to the middle of May, and those who have birds approaching the desired condition of maturity for this purpose should make every endeavour to get them fit before prices begin to fall. When they once begin to drop they usually do so at an approximate rate of threepence about every fortnight, and as the cost of feeding is continuous it is obvious that the producer is suffering a double loss on all birds that progress slowly on a falling market. Nevertheless, the prices remain sufficiently remunerative for some time, and the average return on a successive production should be reasonably satisfying, provided the output of high value birds is not disproportionately small by comparison with the production of cheap chickens. On the other hand, the birds reserved for the renewal of stock must not be forced, but run on a wide range and fed for a more gradual development—as also must those that are hatched at this season to meet the end of the year demand for fowls of size. When and where the sale of eggs for table is not sufficiently remunerative the surplus production should be put in waterglass solution or lime water for unloading at a more profitable season. Those who are continuing chicken production must be careful not to overwork the breeding stock, and pens that have been mated during the winter will not be in a suitable condition to produce a desirable proportion of hatchable eggs and strong chicks; they should be separated and rested, whilst incubating requirements must be met by birds in better condition and more recently mated.

DUCKS.

As in the case of fowls, the rearing of ducklings for stock is a process of gradual development, a good frame and a sound constitution being more desirable than rapid growth. Such birds should be allowed more freedom than those reared for table, and after the first week or two their range should be of considerable extent. From the second week onward they require free access to swimming water, the exercise thus encouraged tending to increase stamina and prevent a too rapid growth. The attainment of the full size characteristic of the breed must on no account be hastened. A good grass run should be included in their range. In the case of exhibition stock a more particular attention is required and rather closer confinement, but not too restricted—and access to a running stream is desirable. The plumage of some varieties will require protection from the sun, and the use of a gravelled yard is a desideratum for ducklings of the Aylesbury breed.

GEESE.

When the goslings are large enough to leave the hutch accommodation—which followed cooping—they may be driven at night into a roomy shed with a well littered floor; running in flocks they are easy to drive and manage. The birds that are being run on for autumn or winter marketing may graze with the stock geese as soon as they are sufficiently forward,

and are then left with greater safety under the protection of the gander. The reservation of meadows for hay and the fuller occupation of the pastures by larger grazing stock restricts the range available for geese. In such circumstances the orchard will provide a convenient place for the younger goslings, but the necessities of the season make it imperative for some breeders to dispose of all their goslings in the green stage—unless there is available common land or waste or rough grazing. Where the conditions are favourable it often pays to run the late-hatched birds on until the autumn, and to finish them on the stubbles.

TURKEYS.

The weather is the chief cause of anxiety now, when the turkey rearer's attention is increasingly occupied in the care of the young broods and their protection from the possibility of a wetting. They must be cooped in a place apart from other poultry, their treatment being different and untainted ground essential to their well-being. In addition to the early feeding already indicated, young turkeys may be given a small allowance of cracked corn from about the second week, continuing the soft food until they are able to take the rations ordinarily fed to the grown birds—but remembering that although a limited quantity of grain is beneficial too large a proportion will tend to retard the desired growth. Common domestic hens that are employed in turkey rearing may be let out with the young birds after about the third week, provided the grass is dry and the range limited in accordance with the size of the youngsters—whose run should be gradually extended as they gain strength.

THE IMPORTANCE OF STRAIN.

THERE are many people who select the present time of year to commence poultry-keeping and one of the most frequent inquiries by the beginner is "What is the most prolific layer?" This is generally asked in quite an offhand manner, and it is expected that the elucidation of the problem is quite simple. The inquirer is perfectly satisfied if he is merely answered by the mention of any breed that happens for the moment to be popular. This, however, is not enough. There is no one breed that can be proclaimed as the "best" layer. Every breed and every variety has its admirers, and each claims to have "got to the top."

What is the best table breed is a question much easier to answer, since such breeds as Dorkings and others of similar type have for generations been famous in this direction, and no attempt has been made in recent years to improve their sterling meat properties. This, of course, applies to kindred breeds as well. It is well known, without further trial, that the Game, both Indian and Old English, are extraordinarily good in this direction, and will improve the meat of any breed with which they are crossed.

With egg-production, however, the matter is somewhat different, since much greater effort has been made to increase the egg yield and fix the characteristics essential to an ideal layer.

There are good and bad layers among all breeds, the same as there are good, bad, and indifferent milkers among Shorthorns and other breeds of cows that are

used for their big averages in milk. It is entirely a matter of strain, and too much importance cannot be attached to this matter. The first step is to choose the breed, and naturally this must be either from among the non-sitting or from the general purpose groups. Of course, the birds that have been chosen may be excellent layers from the very outset. It is quite as likely to happen that the man in search of the "best layer" has hit upon a remarkably good strain. At the same time, good as it may be, it can still be further improved, the same as a poor laying flock may be made better by selection. Therein lies the secret of the whole question of strain—selection. What may be accomplished by selection from the exhibition standpoint is almost unlimited. Size of body, shape and size of comb, long or short legs—unfortunately too frequently the former—and other external characters have all been fixed by selection and judicious mating. There is no doubt that were the same care and attention devoted to the utility side as has been, and is, given to the Fancy points, the results would prove equally gratifying. This, of course, has been done, but not nearly to the extent that it should have been. There are many branches of poultry-keeping where wonderful improvement has been made in the birds themselves and in the way of managing them; at the same time much more should be done. In almost every direction improvement can only be carried out by a certain amount of initial expense. For instance, a man wishes to hatch his chickens very early, either for marketing or for exhibition, and to enable him to do so, he goes to the expense of an incubator. Of course he is perfectly justified in doing so, and probably the cost of the incubator will be repaid ten times over. Nevertheless the fact remains that the enterprise and his adoption of better methods have cost him something, and, of course, the same thing applies to other improvements. Breeding to increase the egg yield can, however, be done by little or no outlay. It is merely a matter of judicious selection, and by only breeding from birds whose performances warrant their inclusion in the breeding-pen. If this be done for several generations it is quite possible to establish a good laying strain. Care should, however, be exercised in the selection of male birds. Whenever possible these should be obtained from a breeder who is conducting his operations on similar lines. Naturally hens have the greater influence in this direction; at the same time the male *has* some influence also, and unless he is from a good laying strain, much of the past selection of the hens will have been in vain.

It may be thought that trap-nests must be employed to find out the best laying pullets. Not necessarily, since there are many indications of a layer, and the attendant being daily among them if he be at all observant can very easily pick out the most active and likely pullets.

Macdonald College.

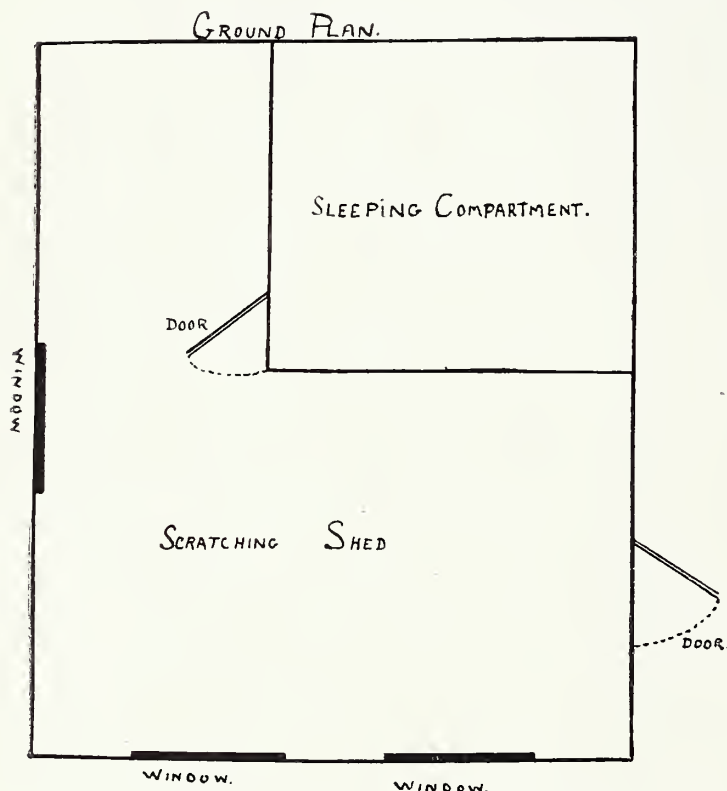
Mr. M. A. Jull, B.S.A., has been appointed to succeed Professor Elford as poultry lecturer and manager at this institution. Mr. Jull was trained at Guelph, and afterwards was assistant at West Virginia Experiment Station. Recently he has been poultry expert to the British Columbian Government.

MRS. WAGNER'S POULTRY HOUSES.

By W. A. KOCK.

THE accompanying photograph shows another of Mrs. Wagner's poultry houses, which is almost of the same construction as the one described in the November issue of the ILLUSTRATED POULTRY RECORD. It is built for fifty to sixty hens, and contains two parts, one a roosting compartment and one a scratching-shed. The former is situated in the back part of the building, and is raised 2½ ft. from the earth, making an extra scratching-shed under the sleeping quarters.

As shown in the photograph, there are large



GROUND PLAN OF MRS. WAGNER'S POULTRY HOUSE.

[Copyright.]

windows in the sides of the scratching-shed facing south and west, and in the east side is placed a door. The floor consists of loose earth, covered with one or another kind of litter. A passage leads from the scratching-shed to the roosting compartment, and can be used by the hens as well as by the owner. In the sleeping compartment is one door, and there are two windows in the front side, under the roof are the ventilation arrangements. The nests are placed in the scratching-shed, as is also the dust-bath.

The poultry house is built of tongued and grooved boarding, and on the roof is laid roofing paper. The sleeping compartment is 9 ft. long, 10 ft. wide, and 6 ft. high, and the scratching-shed is 20 ft. long, 16 ft. wide, and 6 ft. high in front.

Mrs. Wagner has for several years been a breeder of Salmon Faverolles, but especially Barred Plymouth Rocks of American type.

CHICKEN CRAMP.

(Continued from page 318 of April issue.)

GOUTY CRAMP.—If the term gout is taken to imply the symptoms consequent upon an unnatural amount of uric acid in the blood and a failure on the part of the kidneys to get rid of the excess of uric acid and urates in the system, then there can be no doubt that fowls suffer from gout in its typical form. Turkeys, ducks, and geese are not exempt, and it is noticeable that while common enough in the poultry-yard, gout is unknown among other animals on the farm, or in those domesticated by man, with the exception of an instance or two observed in dogs. That it should occur so frequently among birds is not so remarkable if we reflect to how great an extent the avian system is dependent upon the kidneys for the proper elimination of the waste products of the blood.

It was the fashion in the last century to lay great stress upon the part played by hereditary transmission of gout in man. It is much more likely that the repeated appearance of gout in succeeding generations of a family was to be attributed to an inheritance of the environment of habitual high living rather than to any direct transmission of the disease by way of the line of succession. Nor would it be justifiable to take any other view in the light of experience of gout as it occurs in the poultry-yard. There it is met with at almost any age from a fortnight upwards, but is most common in chicks of five or six weeks old, especially if brooder-reared, in chickens of three or four months undergoing the process of fattening for table, and in older birds when overfed and denied range for exercise.

From these facts it may be gathered that the cause of gout in fowls and chickens is to be looked for in overfeeding with certain food elements conducing towards the formation and accumulation of uric acid in the blood and to its deficient excretion by the kidneys. Such food elements are meat and green bone, peas, beans, brewers' grains, or any proprietary meals and dry mixtures which contain them in too rich a proportion. The more meat there is in the diet, the more rapidly will the gout appear, but rapidly-growing chickens with facilities for exercise and hens in full lay are able to resist the evil effects of a heavily nitrogenous diet for a surprising length of time.

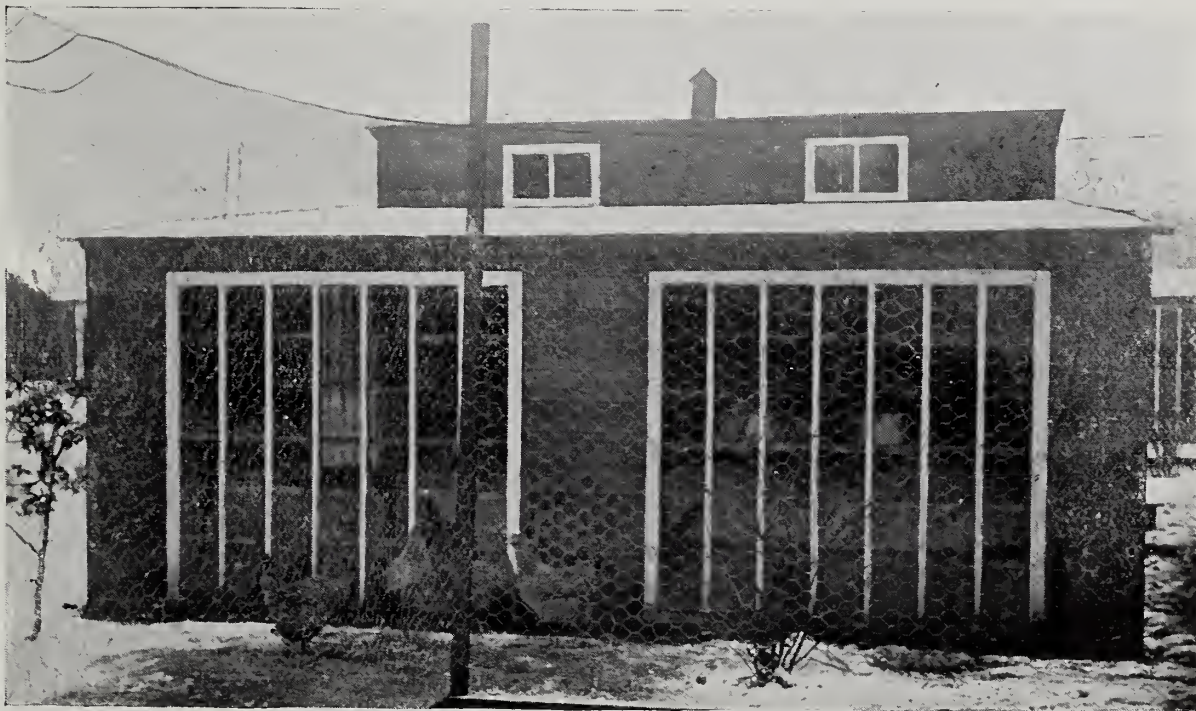
There are many characters about the cramp of gout which help to distinguish it from that of other varieties, and if the other signs of gout present are noted, it is not difficult to make the distinction. There is from the outset a disinclination to use the leg, rather than any marked sign of contraction from muscular spasm. The muscles of the leg, moreover, are not wasted; on the contrary there is swelling, and in the acute stage heat, but chiefly in the region of the joints, any of which, from the hocks downwards, may be affected. Sometimes the corresponding bones in the wings are attacked, but, whatever be the region, the swelling and heat are shortly succeeded by the appearance of hard excrescences of the colour, size, and consistence of split peas. They are, in effect, the chalk-stones of gout, and when they burst, or are opened with the point of a lancet, their contents appear to consist of a soapy, dry substance, in which micro-

scopic examination will reveal uric acid crystals. When chicks are attacked with gout it is seldom that a number are ill at once, and with the exception of loss of appetite and the passing of white milky excrement there is little to indicate, if one excludes their crippled condition, that the sufferers are in a bad way. In the early stage at least of the disease they seem plump and well nourished, but as the kidneys and other vital organs become impaired, anæmia, diarrhoea, exhaustion, and finally death by convulsions ensue.

The treatment of gouty cramp, whether in chicks or adult birds, is first of all to make such a drastic alteration in the dietary as to ensure that it contains very little of the nitrogenous elements. All meat, green bone, or any of the other foodstuffs rich in albuminoids should be at once omitted, at least for some time, and where chicks are concerned it must be remembered that many dry-feed mixtures on the market contain much too high a proportion of peas.

swollen joints will be relieved by fomenting with hot solutions of washing soda, and chalky concretions can be lanced and their contents removed.

RICKETY CRAMP.—The disease known as Rickets is one that is chiefly concerned with growth and development, particularly of bones. It is marked by softening of the bones, which as a consequence become knotted at the joints and curved in their length, and are found to be very deficient in lime salts, so necessary to their strength and stability. Since these lime salts are conveyed to the bones by the blood, it follows that a serious lack of lime salts in the food for a prolonged period will result in a manifestation of this disease, that is, provided that the subject is of an age young enough to be affected. For Rickets is a disease of youth, and as it occurs in poultry, it is limited to chickens between the ages of ten weeks and six months. Indeed, Zürn, a well-known authority on poultry disease, mentions three months as the earliest age of occurrence in chickens. This age limit is use-



MRS. WAGNER'S POULTRY HOUSE, DESCRIBED ON PREVIOUS PAGE.

[Copyright.]

The daily allowance of food should be reduced and chosen from barley-meal, middlings, skimmed milk, boiled wheat and rice, together with fresh, green vegetables. Food should not be left in the run after the birds have fed, the interval between the meals should be long enough to allow of their becoming hungry, and every inducement given to promote scratching exercise. The gouty subjects, if young chicks, may be given half a teaspoonful of olive oil as an aperient twice a week. In the case of older chickens and fowls, a grain of calomel may be substituted. In addition, bicarbonate of potash and citrate of potash are useful in doses of from three to six grains of each salt, according to age, twice a day. The remedy is best given by hand in a pellet of soft food, as the doses are thereby ensured, but proportionate quantities can be mixed, if preferred, with the drinking water. The

ful to bear in mind, for it enables us to exclude Rickets as a possible cause of cramp in chickens that have not attained to the age limit. In a case of chicken cramp in a bird over ten weeks old, we may suspect it to be of rickety origin, if we find knotty swellings on the joints of legs or wings, softening of the bones and sometimes of the beak, crooked and pliable breast-bone, crooked spine (roach back), and carriage of the tail to one side (wry tail). There is an absence of pain and tenderness about the swollen joint, in this respect so different from the condition in other forms of cramp before described, while on the other hand there is much more general deformity, pallor of face, and emaciation. From rheumatic and gouty cramp it may be distinguished by its slower onset and more chronic course. Chickens fed almost entirely on potatoes, rice, and bread during the first

two months of life are almost sure to develop Rickets in the third month. Prevention is, of course, preferable to cure, but if a flock of chickens show signs of becoming "rickety," the diet must be carefully revised and altered where required. Half a teaspoonful of "Parrish's" Chemical Food to every chicken should be mixed with the soft food, and the latter should include a liberal allowance of green bone. Cod-liver oil in doses of half a teaspoonful daily has also been recommended. This also may be conveniently administered in the morning mash.

The cramp of Rickets is noticeable more as an inability on the part of the legs to support the weight of the body than a painful muscular spasm.

From all these considerations it will be recognised that chicken cramp is by no means an uncomplicated symptom, and that it is important in any given case of cramp to ascertain to what group it can be relegated in regard to its causation before endeavouring to cure it. In this, the most successful poultry-keeper will be he who is the most observant.

AN AMERICAN POULTRY BOOK.

IN modern days as each country takes up the poultry industry it follows more or less closely in the wake of other peoples, who have already made considerable advance. The time arrives when, in the light of widened experience and appreciation of the immediate environment, development must be on lines which are to some extent peculiar and in conformity with the conditions of that people and country. Evidence of this is forthcoming sooner or later in the literature of the subject which, to achieve the object in view, must take into consideration the special features and predilections of those for whom it is provided. We are led to these observations on reading a new work by Mr. J. H. Robinson, editor of *Farm Poultry* ("Principles and Practice of Poultry Culture," Ginn and Co.), from the fact that it is the first important work on poultry with which we are acquainted purely American in its thought and tone. Smaller books have presented this aspect, but nothing has hitherto been attempted on the same exhaustive scale. Such larger volumes have been mainly culled from European practice, which differs very distinctly in ideals and methods from that met with across the Atlantic. Therefore, its publication marks an era in the history of this question. It is a finely produced book of 611 pages, well and profusely illustrated, and which reveals the individualism of its author as of his nation. He has wisely looked at the subject through American eyes.

In reading this work the facts stated above have ever to be kept in view by the European reader, otherwise he will find much that does not fit in with his experience. Doubtless there will be many statements upon which there are other opinions in America, but criticisms as to these must be left to those who are able to make them by actual knowledge. Our duty is to accept it as it stands. We cannot but feel, however, that there are many points upon which much might be said, and that certain factors which perhaps have not fully declared themselves are of greater importance than is admitted. One example will suffice.

In Chapter XIX. he says, speaking on co-operative selling of poultry products:

The most that can be said of the most advanced co-operative movements in selling poultry is that they make some progress. With this it should be said that nearly all co-operative movements in this line everywhere have been subsidised either by actual Government grants, or through the services, as promoters, of persons compensated, not by the producers, but by the Government or by some organisation with educational aims.

Such statement does not present the case fairly. So far as we are aware co-operators as such are not, with a few minor exceptions, subsidised. Even in Denmark and Ireland that is not the case. Organisation does no more than when a farmer is provided with instruction at his State College, and is as necessary as education. And, further, unless the producer is helped in this manner he is at the mercy of traders and railway companies, of which there is abundant proof in America. The whole aim of co-operation is to make the combination of producers masters of their own destiny.

In structure the author has adopted sound and practical lines. Part I. deals with the poultry industry, its evolution and economic aspects, in which is much of considerable value; Part II. is concerned with production, covering the entire question in its various aspects. The records of experiment stations are largely used, and the various branches are treated broadly and clearly in the main. In one direction a limited outlook has failed to show what we believe the line of progress—namely, as to fattening. The business of instructors and authors is to indicate avenues of advancement. It is undoubtedly true that American table poultry, with a few exceptions, are inferior to the best European, but we cannot minimise the influence of fattening to the extent he does. The system is one which will probably grow with the demand for superior products. Part III. treats with reproduction inclusive of the different breeds and types, and is a very valuable section, in which, however, are statements which are totally erroneous and some notable omissions. For examples, the Redcap is included in the English meat types, and in the Belgian the Braekel is in the same class, and the Malines excluded therefrom, the Campine being termed a deteriorated Friesland fowl. In fact, this classification is somewhat mixed. Primarily the Braekel is kept as a layer, its flesh qualities being secondary. Part IV. deals with Fancy poultry.

Mr. Robinson has produced a strong, thoughtful book, one which may be commended to all who desire to study the American view, without being committed to the extravagancies which have led astray so many, and of which he is perhaps the most powerful critic in America.

Wisconsin Experiment Station.

A fattening shed 32ft. by 16ft. has recently been added to the poultry plant, to be used for both pen and crate feeding. At present it will be mainly used for instructing students. Fifteen new Colony houses have been provided for research work in connection with breeding and animal nutrition.

COMPOSITION AND NUTRITIVE VALUE OF VARIOUS FOODS
FROM THE FEBRUARY ISSUE OF THE "JOURNAL OF THE BOARD OF AGRICULTURE."

						Total Dry Matter.	Digestible.				Starch Equiva- lent per 100 lb.†	Albu- minoid Ratio.	
							Albuminoids.		Oil.	Carbo- hydrates + Fibre.			
							Crude.*	True.					
						%	%	%	%	lb.			
Cottonseed cake	{	Decorticated	...	...	...	92	35.5	34	8.5	20	71	1: 1.2
		Undecorticated	Egyptian	88	16.5	15.5	5.3	20	40		2.1
		"	Bombay	88	15	14	4	21	37		2.2
Linseed cake	...	...	...	...	...	88	26.5	25	9.5	32	76	2.2
Cocoanut cake	...	...	...	...	...	89	17.5	17	9.5	39	78	3.7
Soy bean cake	...	...	...	...	...	88	37	34	5.5	22	67	1.1
Soy bean meal, extracted	...	...	...	...	...	88	39	36	1.8	24	61	0.9
Soy beans	...	...	...	...	...	89	31.5	28.5	15.5	20	82	2.1
Linseed	...	...	...	...	...	91	18	17	34	21	119	6.1
Locust bean meal	...	...	...	...	...	86	4.3	3.5	1	70	73	21
Maize germ meal	...	...	...	...	...	90	12.5	8.5	10.5	55	85	9.4
Gluten meal	...	...	...	...	...	90	35	33	3.5	42	77	1.6
Gluten feed	...	...	...	...	...	90	23	21	2.5	52	74	2.8
Rice meal	...	...	...	...	...	90	7	6	10	42	70	10.6
Malt culms or coombs...	...	...	...	...	...	90	18.5	11.5	1.5	39	40	4.1
Malt	...	...	...	...	...	92	8	6	2	63	70	11.5
Oatmeal	...	...	...	...	...	90	11.5	10	7	48	72	6.4
Wheat middlings	...	...	...	...	...	88	13	12	3	56	74	5.3
" sharps	...	...	...	...	...	88	12.5	11	3.5	50	58	5.4
" bran, coarse	...	...	...	...	...	87	12	10	3	45	47	5.2
Brewers' grains (wet) fresh	...	...	...	...	...	24	4.2	4	1.3	10	15	3.8
" (dried)	...	...	...	...	...	91	14.7	14	5	35	50	3.8
Treacle or Molasses	...	...	...	...	...	78	5.5	—	—	55	48	—
Meat meal	...	...	...	...	...	89	70	0.7	12.5	—	94	0.5
Wheat	...	...	...	...	...	87	10	9	1.3	65	73	7.6
Barley	...	...	...	...	...	86	7.2	6.7	1.9	64	74	10.2
Oats	...	...	...	...	...	87	10	9	5.3	45	63	6.3
Rye	...	...	...	...	...	87	10	9	1	65	72	7.6
Maize	...	...	...	...	...	89	7.5	7	4.5	68	84	11.1
Beans	...	...	...	...	...	86	22	19	1.2	48	67	2.8
Pea	...	...	...	...	...	86	19.5	17	1	53	70	3.3
Straw, wheat	...	...	...	...	...	86	0.4	0.2	0.4	34	12	1.75
" rye	...	...	...	...	...	86	0.6	0.4	0.4	35	11	90
" barley	...	...	...	...	...	86	1	0.7	0.5	40	19	59
" oat	...	...	...	...	...	86	1.3	1	0.5	39	19	40
" bean	...	...	...	...	...	82	4	3.2	0.5	36	19	11.8
" pea	...	...	...	...	...	86	4.3	3.4	0.7	32	15	10
Meadow hay, medium quality	...	...	...	...	...	86	5.5	4	1	41	31	11
Clover hay, "	...	...	...	...	...	84	8.5	5.5	1.5	38	31	7.9
Pasture grass, young	...	...	...	...	...	20	3	2	0.5	10	12	5.9
" old	...	...	...	...	...	25	2	1.5	0.5	13	11	9.6
Clover (green)	...	...	...	...	...	19	2.5	2	0.5	9	10	5.2
Vetches	...	...	...	...	...	16	3.5	2	0.3	7	8	4.4
Lucerne	...	...	...	...	...	24	3	2	0.5	9	10	5.4
Cabbage	...	...	...	...	...	15	2	1.5	0.5	7	9	5.6
Rape	...	...	...	...	...	14	2	1.5	0.5	6	8	5
Turnip tops	...	...	...	...	...	12	1.5	0.5	0.2	5	6	12.4
Turnips	...	...	...	...	...	9.5	0.6	0.2	0.1	6	6	32.5
Swedes	...	...	...	...	...	11.5	1.2	0.3	0.1	8	7	30
Mangolds...	...	...	...	...	...	12	0.8	0.1	0.1	9	7	98
Carrots	...	...	...	...	...	13	0.8	0.4	0.1	10	9	26
Sugar beet	...	...	...	...	...	25	0.9	0.3	0.1	20	15	70
Jerusalem artichokes	...	...	...	...	...	20	1.0	0.4	0.1	16	16	41
Potatoes	...	...	...	...	...	25	1.1	0.1	0.1	19	19	200
Milk—Cow's whole	...	...	...	...	...	12.5	3.3	3.3	3.7	4.7	16	4.1
" skimmed...	...	...	...	...	...	9.5	3.3	3.3	0.7	4.5	9	6.5
" separated	...	...	...	...	...	9	3.5	3.5	0.1	5	8	1.5
" buttermilk	...	...	...	...	...	9.5	3.7	3.7	0.7	4.2	9	1.6
" Ewe's	...	...	...	...	...	18	6	6	6.5	4.8	26	3.4
" Mare's	...	...	...	...	...	9.5	2	2	1.3	5.7	11	4.4
" Sow's	...	...	...	...	...	18	6	6	6	5	25	3.2
Whey (from cow's milk)	...	...	...	...	...	7	1	1	0.3	5	6	5.7

* The "crude albuminoids" include true albuminoids together with certain other nitrogenous substances ("amides") that are of less value to the animal.

† The figures in this column represent the weights of starch that are equivalent, for fattening or other productive purposes, to 100 lb. of the foodstuff of the composition given. They have been calculated by a method devised by Kellner (see *Journal*, Dec. 1911, p. 721).

THE COTTAGER'S FOWLS.

IT is a well-known fact that poultry-keeping on a small scale usually shows better profits than a larger production, the chief reasons being that the labour of looking after a few birds amounts practically to nothing, and little in the way of food has to be purchased. In poultry-keeping, therefore, the cottager is often at an advantage as compared with his well-to-do neighbours, as if he took the trouble to keep accounts, as he very seldom does, it is probable that the return shown on the very small amount of capital invested would be considerable. A very important point in favour of the poultry-keeping cottager is the circumstance that, generally speaking, there is a piece of waste land close to his cottage where his fowls may spend a good deal of their time and pick up a by no means inconsiderable portion of their living. One

Sussex and Kent, where the custom is a very common one, one seldom hears of thefts being committed. The mere fact of the birds being placed in so conspicuous a position is doubtless an excellent safeguard against the possibility of stealing.

Cottagers' poultry-keeping varies, of course, according to the kind of market that it is intended to supply. In some districts eggs are in better demand than chickens, while in others the reverse may be the case. In all country districts within reach of a good-sized town the cottager can generally manage to find a ready sale both for eggs and chickens. His local trade is also considerable, and many a cottager depends upon it entirely to get rid of all that he produces. Chicken-rearing takes up a good deal of time, but where there are wives or daughters always at home it becomes an easy and often a profitable business. Directly the birds are hatched they go out into coops by the roadside,



A COTTAGER'S POULTRY RUN.

[Copyright.]

must admit that since the motor-car came into being the difficulties of roadside poultry-keeping have been added to, and there is no doubt that the losses caused to cottagers by their chickens being run over by passing cars (the occupants of which would never dream of stopping to make good so trivial a circumstance!) is quite considerable. The privilege, however, of having the use of a strip of grass by the roadside, or a common over which one's poultry may roam at will, is a very real one, and the wise cottager takes full advantage of it. One believes that the road authorities—to whom the unappropriated portions of land by the wayside now belong—never raise any objections to the coops of the cottager being placed thereon. In some parts of the country, perhaps, such methods of poultry-keeping might be considered rather unsafe, but in

and stay there, often enough roosting in any ramshackle contrivance until big enough to market, or nearly so. The cottager usually sells his chickens to the higgler or dealer, but sometimes finishes them off himself by shutting them up to fatten at the end. In Kent and Sussex several cottagers of humble means make a practice of cramming the fowls they rear with one of the older patterns of machine, which can often be picked up at a sale for a few shillings. One believes that the practice of cramming by hand with moistened pellets of meal is now seldom followed, but at one time it was very popular. If the work is carefully done, the birds fatten well enough under the system, and the only objection to the process is that it is painfully slow. Crammed chickens naturally fetch better prices than those fattened without this artificial

aid, but if the cottager can get 2s. 6d. or 3s. from his private customers for a running bird when it is fit for table, he is very well satisfied, and gains a small profit for his trouble.

Under ordinary circumstances the cottager does not go in for what are known as "laying varieties" of poultry, for the general purpose bird that will lay a fair quantity of eggs, and rear a brood or two as well each season, suits him better. He seldom has space to keep more than a single pen of laying birds, and since these spend a large portion of their time in roaming about, it would not be very easy to keep them pure. Anything of the heavy type will answer his purpose so long as it is a fair layer and a good sitter, and in game-rearing districts it is often to the cottager's advantage to have a few more broody hens than he requires for his own use. Gamekeepers are always ready to buy hens for hatching pheasants' eggs in April and May, and the cottager can then dispose of his older birds at 2s. 6d. or 3s. apiece after they have finished their first laying. Sometimes the keeper simply hires the birds, paying 1s. or 1s. 6d. for the use of them during the season, and this arrangement suits both parties well enough if the birds are young and worth having back again. Even in country places fresh eggs fetch higher prices in autumn and winter, and in some districts never go below 1s. a dozen. In the chicken-rearing districts of Sussex the price varies from this figure to as much as 3s. a dozen in November and December, when eggs are scarce and those that can be had are chiefly wanted for hatching out early chickens. In Hampshire, on the contrary, eggs in April and May are sometimes worth no more than 1s. per score, and at this price it pays the cottager, or anyone else, better to put them down in pickle for winter use rather than sell them. For this purpose the proprietor of the village shop will often give a better price than the cottager can obtain in the open market when eggs are plentiful.

Except in a few special districts the cottager does not concern himself much with the keeping or rearing of other poultry than fowls proper. Ducks are no particular favourites of his, because, if allowed to wander, they will spend their whole time in somebody else's pond. There is also the objection, which one has often heard raised, that "they eat too much." It is true that although they mature much more quickly than chickens, one has to lay out a larger amount of money at a time in buying food for them. From the cottager's point of view, this is a serious objection. Nor is there much profit in rearing ducks for table unless one can get them early, and the cottager seldom has any facilities for doing so. Geese, however, are a different matter, and a great many are kept by cottagers whose dwellings adjoin a common or large waste by the wayside, where the birds to a great extent can keep themselves by grazing.

Foxes in Australia.

Reynard does not alone prove himself a nuisance to poultry-keepers in Britain, as he is making his influence felt in Australia, where, it is said, he has played great havoc. Introduced to keep down rabbits, the fox has turned his attention to fowls, evidently regarding a change of diet as good for his health.

YEAR-BOOKS.

FOR the third and last time of asking." This is the third series of comments we have made on the 1912 Year-Books issued by the various specialist poultry clubs. And, since the season is now well advanced, it must be our last. Even as late as this, up to the time of going to press with the May issue of the RECORD there is at least one that is not to hand. We have it on good authority, notwithstanding, that the advertisements had been received and all "copy" in the secretary's hands some weeks since, hence we cannot understand the delay. However, we will deal briefly with the remainder we have received.

The Columbian Wyandotte Club's Year-Book is the first issued by the club; but if it had not been a first we might have felt inclined to say it was disappointing. However, it contains "A Chat about Columbians" from Mr. W. M. Elkington and the experiences of one of the first breeders of Columbians in this country, and both articles are well worth perusing. There are in the book a couple of pencil sketches of the club's ideals and a plate of feathers; but the former do not convey to us what the standard leads one to imagine, nor do they represent, in our opinion, the ideal specimens. We prefer direct photographs of winning birds. Copies of the year-book are obtainable by non-members for sixpence of the hon. secretary and treasurer, Miss Peel Holmes, Moor's Head, Forton, near Garstang.

The Ladies' Poultry Club's annual is a dainty book and worthy of the ladies. The club is established to promote the interests of women exhibitors and to develop poultry-keeping by cottagers throughout the land. The publication contains an interesting series of articles on different breeds by members, who are experts, as well as the reports of Messrs. W. M. Elkington and W. J. Golding, who judged last year's show. Mrs. Frank Bateman, of Shinfield Lodge, Reading, will be pleased to forward a copy of the year-book to anyone interested for threepence, post free.

The Indian Game Club's Year-Book is issued under the title of the "annual report." Certainly it does not contain any articles, but beyond the usual matters there are reports of the club show, and a list of winners of the challenge cups, while there are among the illustrations portraits of some prominent members and half-tone cuts of the various challenge cups and bowls. Mr. E. D. Gladwin, of 8, Poplar Avenue, Chatsworth Road, Chesterfield, is the assistant secretary, and to him should be addressed communications concerning the club.

The Brown Leghorn Club's annual is a neat little brochure, but it contains nothing beyond the "cut and dried" items incidental to a year-book. Mr. T. Robinson, of 123, Ramsden Road, Wardle, near Rochdale, is the hon. secretary and treasurer, and copies of the year-book can be obtained of him for three penny stamps.

From all accounts the Blue Leghorn Club is "going strong," but its year-book is in the usual form. It is interesting to know that both the variety and the club are on the up grade, and that the Blue made great strides during the past year. Mr. Frank Bailey, of Union Road, Low Moor, Bradford, is the hon. secretary and treasurer.

In last month's notes we said of the White Wyandotte Club's Year-Book that it took the championship prize among specialist clubs' annuals. It is an excellent publication, admittedly, but—since then another champion has turned up. This is "The 'Red' Breeders' Annual," the third year-book of the British Rhode Island Red Club, and for one so young it "takes the palm." From cover to cover—and the binding is in boards—it is full of interesting matter, and, well, no wonder the Red is booming. The numerous articles it contains are written by recognised authorities, and they are written so that the veriest novice can understand them. The editor, Mr. George Scott—who is also the hon. secretary and treasurer of the club—is something of a penman, and he has given us of his best. "Breeding the Winners," by Mr. S. Charlton (president of the Canadian R.I. Red Club), is an article worth careful studying by all fanciers who wish to get good Reds. And so is that by the Rev. F. S. Banner, B.A. (president of the British R.I. Red Club), on "Are Smut, Striping, and Double Mating Needed in the Breeding Pen?" Mrs. A. J. Jones writes of "The Little Red Hen," and voices a timely word of warning respecting the dangers attendant on allowing fancy points to overshadow the utility qualities of the breed. Some notes on the Red in South Africa are contributed by Mr. H. Gilmour-Bell (president of the South African R.I. Red Club), while Mr. Edwin Banner, a late vice-president, gives an interesting account of "Reds in Canada," and Mr. T. C. Solomon has much to say of "The Cult of the Red." There is a novel series entitled "My Ideal" in which the seven club judges give their opinions, which, together with that on "Placing the Cards," should prove very interesting and useful to breeders. There should be a rush for copies of "The 'Red' Breeders' Annual, 1912," which, owing to the heavy cost of production and the fact that the postage on a single copy is 2½d., can be obtained by non-members for eightpence, post free, of Mr. George Scott, The Windmill, Pudsey, Yorkshire.

The Variety Bantam Club's Year-Book is indeed a work of art and worthy a place in any fancier's library. Among the many interesting articles it contains is one by Mr. T. H. Bowen (hon. secretary of the Brahma Bantam Club), which should be "inwardly digested" by those who agitate for new clubs. Mr. R. Scott Miller treats of the Bantam Fancy in Scotland in 1911, while Mr. J. F. Entwisle deals with "Bantams in 1911," and Mr. R. Fletcher Hearnshaw has something to say on the Rosecomb and the Scotch Grey during a like period. Some interesting notes on the Sebright are written by Mr. J. C. Preston and on the Japanese by Mr. A. E. W. Darley, while the newer varieties are ably commented on by Mr. E. H. Hipkins. Several fine illustrations of noted prize-winners taken from photographs relieve the letterpress. Copies can be obtained of Major G. T. Williams, Manor House, Burton Joyce, Notts.

There is not much for "outsiders" in the Plymouth Rock Club Year-Book beyond the club show reports by the judges. The club's balance-sheet shows a sum of over £12 in hand, but considering that the loss on the show at Sheffield in 1910 was almost £31 and the deficit on last year's club show at Manchester was £2 5s., the society is to be congratulated on weathering the storm. The hon. secretary and treasurer is

Mr. Alfred A. Fleming, The Avenue, Flitwick, Beds.

The White Plymouth Rock Club—which was only formed towards the end of last year—has come into line and issued a year-book. Among the letterpress is a preface by the hon. secretary, a short letter by the president, and a few hints to beginners from an old hand. Non-members can obtain copies for threepence each, post free, of the hon. secretary and treasurer, Mr. J. E. D. Moysey, Venton, Totnes, Devon.

The Sussex Poultry Club's Year-Book contains some excellent notes on the three varieties—Light, Red, and Speckled—fostered by the club, while there are notes from the judges at several events, a few words from an Irish member, and reports of the German and the American Sussex Clubs. A review of the breed for the past year is given in "Sussex Fowls in 1911." The hon. secretary is Mr. S. C. Sharpe, Brookside, Ringmer, Lewes.

The Brown Sussex Club has issued its annual as a "Report and Balance-Sheet." We note with pleasure that the Brown Sussex has improved greatly during the past year, and that the type and colour are well set. Grand support has been given to shows where the variety was catered for, and the popularity of the Brown is sure to increase when its many good qualities are known. Copies of the pamphlet will be sent free to anyone applying to the hon. secretary Mr. J. T. Ade, jun., Grove Hill Farm, Hellingly, Sussex.

The Bresse Club has issued its first year-book, and it is a credit to all concerned. Among interesting articles may be mentioned some notes on the breed as an exhibition fowl by Mrs. Chatterton, "La Bresse," by Mr. C. E. J. Walkey, "La Bresse Race," by Mrs. Hollams, and a "Monograph of the Bresse Poultry Breed," translated from the French standard, on which the English is based. The illustrations are of a White cockerel and a Black pullet, the former appearing to have red lobes and the latter white. The secretary of the club is Mr. G. H. Caple, Manor Farm, Stanton Prior, near Bristol.

The Hamburgh Year-Book for 1912 is a year-book on the old lines, and contains nothing beyond the usual "cut and dried" matters. The hon. secretary and treasurer is Mr. F. Jagger, Baildon, Shipley.

The Ancona Club Year-Book can rank with the best as far as illustrations and production are concerned, containing as it does some very interesting articles and photographic reproductions of prize-winning birds, both single-comb and rosecomb. Among the former is one on type, by Mr. F. Whittaker, while Mr. W. Beresford Webb deals with the utility side, and Mr. W. E. Barber encourages the novice and beginner. Mr. Thomas Layberry, 110, Horninglow Street, Burton-on-Trent, is the hon. secretary and treasurer.

Among the articles in the Black Leghorn Club Year-Book are those by the Rev. T. W. Sturges, B.A., on "How to Breed Exhibition Pullets," and by Mr. Bert Kirkman, "Notes on Single-combed Cockerels." Copies can be obtained for fourpence post free of the hon. secretary and treasurer, Mr. Clifford Willison, Bubney, Whitechurch, Salop.

For some reason or other a list of members is omitted from the Cuckoo and Blue Orpington Club's Year-Book. Mr. A. C. Gilbert, Swanley Poultry Farm, Swanley, Kent, is the hon. secretary.

W. W. B.

COOKING PIGEONS.

ALTHOUGH these birds are really in season all the year round, they are at their best for table purposes from midsummer to Michaelmas. Tame pigeons should always be cooked as soon as possible after being killed, as they very quickly lose their flavour; but the other kinds, rock and wood pigeons, are decidedly better in every way if allowed to hang for a few days previous to cooking. Dressed according to the following methods they are, as a rule, very highly appreciated by the majority of people.

PIGEON PIE.—Divide the birds in two lengthwise, cut off their feet at the first joint, and turn the legs inside close to the pinions; then put into each half bird a little forcemeat made of the livers of the pigeons finely minced and well seasoned with salt, pepper, and parsley, and moistened with fresh butter, just slightly melted. Have ready a pie-dish of the requisite size, and arrange at the bottom a layer of tender rump steak, cut in small neat pieces, and lightly seasoned with salt and pepper; then put in the pigeons, packing them as neatly as possible, with slices or quarters of hard-boiled eggs between the pieces, and a few tiny bits of fresh butter here and there. Pour over sufficient good strong stock to thoroughly moisten the whole, then line the edges of the pie-dish with suitable pastry, and cover with a thick lid of the same; press the edges firmly together, ornament the top tastefully with the odd pieces of pastry stamped out in pretty fanciful shapes, brush over with beaten eggs, and bake in a moderate oven. When done enough, fix a frill round the pie-dish, set it on a flat dish covered with a neatly-folded napkin, and serve at once, accompanied by some creamy brown gravy pleasantly flavoured with mushroom or walnut ketchup.

PIGEON PUDDING.—Line a pudding basin of the requisite size with a good suet crust rolled out about half an inch thick; then fill it with the pigeons, which have been cut up and prepared as directed for "pigeon pie," small pieces of tender rump steak pleasantly seasoned, carefully prepared button mushrooms, and roughly-chopped hard-boiled eggs. Moisten the whole with a little good stock or gravy, cover with a lid of the pastry and press the edges firmly together, then tie securely in a well-greased or floured cloth; plunge the pudding into plenty of boiling water to quite cover it, and boil steadily from two to two and a half hours, adding more boiling water as that in the saucepan diminishes, in order to keep the pudding entirely covered all the time. When done enough, turn the pudding out very carefully on to a hot dish, and coat the surface very lightly with a small quantity of rich, creamy sauce, either mushroom, tomato, or piquant, and garnish the edge of the dish with daintily-curled bacon and slices or quarters of fresh lemon. Serve very hot, accompanied by more sauce or well-flavoured gravy in a hot tureen.

PURÉE OF PIGEONS.—After preparing the birds in the usual way, cut them into joints and stew them gently in a little strong, pleasantly-flavoured stock until quite tender, then remove all the meat from the bones, return the latter to the stewpan, and simmer steadily until all the good has been extracted. Cut the meat up into very small pieces, then tear these into fine shreds, using two forks for the purpose. When thus prepared, put the meat into a bowl, and season it well

with salt, pepper, mace, and lemon juice, moisten it with a little of the stock, which has been carefully strained, and, if obtainable, a few tablespoonfuls of good cream, then thoroughly reheat, without allowing the preparation to reach boiling-point. When ready, dish up the purée in the centre of a firm, neatly-shaped border of creamed cabbage, garnish round about with daintily-fried potato croquettes and sprigs of parsley, and send to table as quickly as possible.

PIGEONS STEWED WITH GREEN PEAS.—Prepare the birds very carefully, and truss them as for boiling, using twine instead of skewers, then place them in a stewpan with a small quantity of fresh butter or pure beef dripping, and turn them about over a moderate fire until well browned. Now take them up, drain them carefully, and set them aside for a few minutes. Add an ounce of flour to the fat remaining in the stewpan, and stir until quite smooth, then add a pint of stock and continue stirring constantly until boiling-point has been reached, when the sauce must be strained off into another stewpan; add the prepared pigeons, a seasoning of salt and pepper, a bunch of savoury herbs, and a quart of freshly-shelled green peas, and simmer gently until the latter are sufficiently cooked without being at all broken. When done enough, take up the birds, and, after carefully removing the twine, arrange them in a pile on a hot dish. Then reject the bunch of herbs, pour the peas over the birds, garnish round about with dainty little rolls of fried bacon, slices of lemon, and sprigs of parsley.



A JUBILEE ORPINGTON.

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TABLE OF PRICES REALISED FOR HOME, COLONIAL, AND FOREIGN POULTRY, GAME, AND EGGS FOR THE FOUR WEEKS ENDING APRIL 20, 1912.

ENGLISH POULTRY—LONDON MARKETS.

DESCRIPTION.	PRICES REALISED DURING THE MONTH.			
	1st Week.	2nd Week.	3rd Week.	4th Week.
	Each.	Each.	Each.	Each.
Surrey Chickens	3/3 to 5/0	3/6 to 5/0	3/6 to 5/0	3/6 to 5/6
Sussex "	3/3 " 5/0	2/9 " 4/9	3/6 " 5/0	3/6 " 5/6
Yorkshire "	2/9 " 4/6	2/6 " 4/0	2/6 " 4/0	3/0 " 4/6
Boston "	2/9 " 4/0	2/6 " 4/0	2/6 " 4/0	3/0 " 4/3
Essex "	2/9 " 4/0	2/6 " 4/0	2/6 " 4/0	3/0 " 4/0
Capons	5/6 " 7/6	4/6 " 7/6	5/6 " 7/6	5/6 " 7/0
Irish Chickens	2/3 " 3/3	1/6 " 3/0	2/6 " 3/9	2/9 " 4/0
Live Hens	2/3 " 3/3	2/0 " 2/9	2/3 " 3/0	2/3 " 2/6
Aylesbury Ducklings	5/0 " 7/0	2/9 " 6/0	4/6 " 6/6	4/6 " 6/6
Ducks	2/9 " 3/3	2/6 " 3/0	—	—
Geese	—	—	—	—
Turkeys, Cocks ...lb.	0/8 " 0/11	0/8 " 0/11	—	—
" Hens ...lb.	0/8 " 0/11	0/8 " 0/11	—	—

ENGLISH GAME—LONDON MARKETS.

DESCRIPTION.	PRICES REALISED DURING THE MONTH.			
	1st Week.	2nd Week.	3rd Week.	4th Week.
	Each.	Each.	Each.	Each.
Grouse	—	—	—	—
Partridges	1/6 to 1/8	1/6 to 1/8	1/6 to 1/8	—
Pheasants	2/6 " 2/9	2/3 " 2/6	—	—
Black Game	—	—	1/10, 2/0	—
Hares	—	—	—	—
Rabbits, Tame	1/6 " 2/6	1/6 " 2/0	1/6 " 2/0	1/3 " 2/9
" Wild	0/6 " 0/11	0/4 " 1/0	0/6 " 0/11	0/6 " 0/10
Pigeons, Tame	—	—	—	—
" Wild	—	—	—	—
Wild Duck	1/6 " 2/0	1/3 " 1/9	1/6 " 2/0	1/6 " 1/9
Woodcock	—	—	—	—
Sniipe	—	—	—	—
Guinea Fowls	2/6 " 3/0	2/6 " 3/3	2/6 " 3/0	2/6 " 3/0

ENGLISH EGGS (Guaranteed New-Laid).

MARKETS.	PRICES REALISED DURING THE MONTH.			
	Per 120.	Per 120.	Per 120.	Per 120.
LONDON	7/6 to 9/6	8/6 to 9/6	8/6 to 9/6	8/6 to 9/6
Provinces.	Eggs per dozen.	Eggs per dozen.	Eggs per dozen.	Eggs per dozen.
CARLISLE	0/10	0/10	0/10	0/9
BRISTOL	0/10	0/10	0/10	0/10

FOREIGN POULTRY—LONDON MARKETS.

COUNTRIES OF ORIGIN.	PRICES REALISED DURING THE MONTH.			
	Chickens. Each.	Ducks. Each.	Ducklings. Each.	Geese. Per lb.
Russia	1/6 to 2/9	2/0 to 2/6	—	—
Belgium	—	—	—	—
France	—	—	—	—
United States of America	—	—	—	—
Austria	—	—	—	—
Canada	—	—	—	—
Australia	—	—	—	—

IMPORTS OF POULTRY AND GAME. MONTH ENDING MARCH 30, 1912.

COUNTRIES OF ORIGIN.	DECLARED VALUES.	
	Game.	Poultry.
Russia	£9,696	£50,284
France	£80	£2,594
Austria-Hungary	—	£2,024
United States of America	—	£14,753
Other Countries	£3,518	£6,653
Totals	£13,294	£82,308

IRISH EGGS.

DESCRIPTION.	1st Week.	2nd Week.	3rd Week.	4th Week.
	Per 120.	Per 120.	Per 120.	Per 120.
Irish Eggs	8/0 to 9/6	8/3 to 9/0	8/3 to 9/0	8/0 to 9/0

FOREIGN EGGS.

DESCRIPTION.	1st Week.	2nd Week.	3rd Week.	4th Week.
	Per 120.	Per 120.	Per 120.	Per 120.
French ...	8/0 to 9/3	8/0 to 9/3	8/0 to 9/0	8/0 to 9/3
Danish ...	8/0 " 9/3	8/0 " 9/3	8/0 " 9/3	8/0 " 9/0
Italian ...	7/9 " 9/0	—	—	—
Austrian...	7/0 " 7/9	7/0 " 7/9	7/6 " 8/0	7/9 " 8/3
Russian ...	—	—	—	—

IMPORTS OF EGGS. MONTH ENDING MARCH 30, 1912.

COUNTRIES OF ORIGIN.	DECLARED VALUES.	
	Quantities in Gt. Hund.	Declared Values.
Russia	112,388	£47,192
Denmark	205,819	£104,176
Germany	80,111	£37,181
Netherlands	135,856	£79,162
France	96,715	£45,202
Italy	248,468	£127,921
Austria-Hungary	276,471	£118,137
Other Countries	293,621	£103,141
Totals	£1,449,449	£653,112

MAY NOTES FOR AMATEURS.

MAY ushers in a new era, for the days are long, and we may reasonably expect to be rid of the piercing winds, and to experience that soft, balmy, and often humid weather that is so beneficial to vegetation and young growing stock. Chickens should make great headway this month, before the excessive hot and dry weather sets in, and as there is plenty of insect life about, it follows that early rising is good for both man and bird. Some people say that it is a bad plan to let chickens run about among the long grass while the dew is upon it, but it is a long time since I have seen the grass long enough and the dew heavy enough to necessitate close confinement after 7 a.m. during this month. On a fine spring morning there is nothing much to fear from this source, though in wet weather one must take precautions.

There is one direction, however, in which we must exercise care, and that is in keeping the young stock free from insect pests. Fine growing weather will avail us little if we allow red mites and other pests to multiply unchecked. Red mites are the most to be feared, though the easiest to deal with, for they feed upon the birds at night in the houses, and in the daytime are to be found in the woodwork, in perch sockets, cracks, and joints. Therefore, you can only destroy them completely by running the fluid employed into all cracks, and I find the best plan is, in the case of sectional buildings, to take each house to pieces before the chickens are put into it, give it a thorough coating of a preservative on both sides, and especially in the corners, and let it dry for a few days before bolting it together again. A spray pump may save this trouble by getting the fluid well into the cracks, but I doubt if it will do the work so effectually.

The question is frequently asked whether late hatching pays, and the answer must depend upon circumstances. If you have plenty of room and can put a few chickens out on fresh ground in order to give them a fair chance, they should pay very well, especially if you are breeding for show purposes or for table birds, though layers would not be so profitable, because you would probably have to keep them half the winter before they gave any return. But when space is limited and you already have earlier birds to which it can be devoted, late chickens are not desirable. There is still, of course, time to hatch a few chickens of the quick-growing breeds, such as Leghorns, with a reasonable chance of getting eggs by November, but the eggs must be set at once.

Where sufficient eggs have been set breeding-pens may now be broken up, and this is especially desirable where only a few hens are running with a cock and the hens are becoming bare on the cushion. Put the cock into a run by himself, or get rid of him if he is of no particular value, for in such cases it does not pay to keep a male bird till next season, especially as a vigorous cockerel is more likely to fertilise eggs than an old cock.

To revert for a moment to the subject of late hatching would-be fanciers who have room for a few chickens can very often do a good stroke by buying eggs from successful breeders at this time of the year. Prices are considerably reduced, and as most of the leading breeders have finished hatching, some good

eggs may be obtained. A late-hatched show bird is not to be despised, for it comes in towards the end of the season when the others are going off in condition, and it may do good service in the following summer. Many good bargains have been obtained in this way by buying late eggs.

Now is the time to market early chickens and ducklings. Do not forget that you can make more of chickens by selling when they are between three and four months old at this time of the year than by keeping them another two months, and if you are not able to fatten them, there are plenty of fatteners who would be glad to buy them. Ducklings should be got off by the age of ten weeks or the pin feathers will be growing and their value will depreciate.

EXPERIMENTS IN CHICKEN-REARING.

AN interesting series of trials have been made at the Harper-Adams Agricultural College on the growth of autumn and spring chickens. It is quite possible that the exceptional weather during 1911 has affected the results of the experiments, and some modifications may be necessary.

AN EXPERIMENT IN AUTUMN AND SPRING CHICKEN REARING.

The objects of this experiment were three in number—namely (1) to determine the cost of rearing autumn-hatched chickens to a killing age; (2) to note the rate of increase in weight week by week for food consumed; (3) to compare the cost of autumn and spring rearing.

FEEDING.

In both experiments the feeding was the same. For the first twelve weeks they were fed entirely on dry food. From twelve weeks to the time of selling they were given soft food during the day and whole barley for the evening feed.

AUTUMN REARING EXPERIMENT, 1910.

	Food Consumed.		Cost.		Weight of 16 Chickens.	Average per Chick.
	lbs.	ozs.	s.	d.	lbs. ozs.	lbs. ozs.
1st week	...	1 11.25	0	4.00	—	—
2nd "	...	2 8.75	0	6.00	—	—
3rd "	...	3 6.50	0	8.00	—	—
4th "	...	3 13.50	0	9.00	5 6	0 5.30
5th "	...	8 8.00	1	8.50	9 0	0 9.00
6th "	...	9 0.00	1	11.14	11 8	0 11.50
7th "	...	9 8.00	1	0.21	13 4	0 13.25
8th "	...	9 8.00	1	0.21	18 8	1 2.50
9th "	...	11 0.00	1	2.14	20 0	1 4.00
10th "	...	8 0.00	0	10.28	23 8	1 7.50
11th "	...	11 0.00	1	2.14	23 8	1 7.50
12th "	...	10 12.00	1	1.82	25 8	1 9.50
13th "	...	22 12.00	2	3.25	28 0	2 0.00
14th "	...	20 8.00	2	0.64	37 0	2 5.00
15th "	...	24 0.00	2	4.57	43 0	2 11.00
16th "	...	23 8.00	2	3.50	47 0	2 15.00
17th "	...	26 0.00	2	6.42	53 8	3 5.50
18th "	...	27 8.00	1	7.64	60 8	3 12.50
Total	...	233 0.00	25	5.46	60 8	3 12.50

Total weight of sixteen chickens.....	60lb. 8oz.
Average weight per chicken	3lb. 12½oz.
Total food consumed	233lb. 0oz.
Food consumed per chicken	14lb. 9oz.

Initial cost for thirty-one eggs	s. d.
Cost of oil for incubator and brooder	5 2
Cost of grain and meal	1 1
Cost of grain and meal	25 5½

Total	31 8½
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RETURNS.

Average cost per chicken, 2s. 0.15d.

Market value per chicken, 3s.

SPRING REARING EXPERIMENT, 1911.

	Number of chicks.	Total weight of chicks. lbs. ozs.	Average per chick. lbs. ozs.	Food con- sumed. lbs. ozs.	Cost. s. d.
When hatched...	43	3 8	0 1.23		
End of—					
1st week ...	—	—	—	2 0	0 2.8
2nd „ ...	—	—	—	4 0	0 5.6
3rd „ ...	—	—	—	7 0	0 9.8
4th „ ...	42	12 8	0 4.76	10 0	1 1.3
5th „ ...	42	17 0	0 6.47	12 8	1 5.5
6th „ ...	42	21 0	0 8.00	14 0	1 7.6
7th „ ...	41	24 8	0 9.33	17 0	1 10.8
8th „ ...	41	33 8	0 12.76	20 8	2 3.2
9th „ ...	41	42 8	1 0.58	32 8	3 7.5
10th „ ...	41	47 0	1 2.34	27 8	3 0.8
11th „ ...	40	56 0	1 6.40	29 8	3 3.5
12th „ ...	40	63 8	1 9.40	37 8	4 2.2
13th „ ...	38	66 0	1 11.80	39 8	2 2.9
14th „ ...	38	79 0	2 1.26	34 0	1 11.8
15th „ ...	38	88 0	2 11.50	44 0	2 6.0
Total ...	38	88 0	2 11.50	331 8	30 9½

Initial cost of eggs	£ s. d.
Cost of oil for incubator and brooder	0 8 4
Cost of food	0 2 0
Cost of food	1 10 9½

Total	2 1 1½
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RETURNS.

Average cost per chicken, 1s. 1d.

Market value per chicken, 2s.

Note.—The conditions for rearing in spring are much more suitable than in autumn, and should result in quicker growth. The results of the spring experiment carried out in April, 1911, do not bear out this theory, but the slowness of growth was undoubtedly due to the exceptionally hot weather which prevailed during the experiment. It is hoped that by further experiment better results will be obtained.

FERTILITY TRIALS.

The object of this experiment was to show how the number of fertile eggs produced by a number of birds is affected by the conditions under which the stock birds are kept.

For the purpose of the experiment pens of birds were kept in confined runs, and others were placed in portable field houses with an unlimited range over pastures.

In the enclosed runs pure-bred silver Wyandottes, Faverolles, Speckled Sussex, and White Leghorns were used; also a cross between a Speckled Sussex cockerel and Buff Orpington pullets. The number of pullets or hens placed with each cock or cockerel was varied in

the pens, but the same number was used in each case in the field houses.

To test the fertility of each pen, eggs were selected at six different periods during the season. The eggs were placed in incubators, and were tested on the seventh day of incubation, and the unfertiles removed. Records were kept of the number of unfertiles, chicks which died in the shell, and the chicks hatched.

The following birds were used for the experiment :

ENCLOSED RUNS.

Pen 1, ten silver Wyandotte pullets and a silver Wyandotte cockerel.

Pen 2, eight speckled Sussex pullets and a speckled Sussex cockerel.

Pen 3, four Faverolles pullets and a Faverolles cockerel.

Pen 4, four white Leghorn pullets and a white Leghorn cock.

Pen 5, eight silver Wyandotte hens and a silver Wyandotte cock.

Pen 6, five buff Orpington pullets and a speckled Sussex cockerel.

FIELD HOUSE.

Pen A, fifteen mixed pure-bred buff Orpington, silver Wyandotte, and white Leghorn pullets, with a buff Orpington cock.

Pen B, the same as pen A.

RESULTS.

	Unfertiles. %	Hatched. %	Dead in shell. %	Percentage of fertiles dead in shell. %
Pen 1	20.48	61.44	18.07	22.72
„ 2	11.56	67.00	21.35	24.17
„ 3	15.38	46.15	38.46	45.45
„ 4	15.52	56.56	28.11	33.33
„ 5	22.22	55.55	22.23	30.95
„ 6	13.23	63.38	22.53	26.72
Average	16.41	58.34	25.12	30.55
Field House A ...	10.00	70.00	21.56	29.64
„ B ...	8.40	72.72	17.20	24.57
Average	9.20	71.36	19.38	21.36

CONCLUSIONS.

1. That the eggs were more fertile from the field houses.

2. That the germs were stronger in the eggs from the field houses.

3. That the percentage of dead in the shell does not seem to bear any relation to the proportion of unfertile eggs.

4. That more hens or pullets may be run with cocks on a free range than in enclosed runs.

5. That better results can be obtained from two-year-old cocks on a free range than in enclosed runs.

“You Pay for the Candling.”

Such were the words of Mr. John A. Gunn, of Montreal, in an address delivered to farmers at the Ontario Winter Fair, in which he dealt with “the dealer’s difficulties in securing an adequate supply of the best grade of eggs,” in order to emphasise the importance of greater care in the collection and sale, the absence of which means that merchants have to test out for quality. His estimate is that of all the eggs received 17 per cent. are bad.

TWO MORE YEAR-BOOKS.

JUST as we were "closing down" with the present issue we were permitted to see an advance copy of the thirteenth Year-Book of the Buff Orpington Club, so we must retrieve our remarks made earlier in the paper. In his introductory notes, the hon. secretary apologises for the delay in issuing the book—"Unfortunately the delay has been caused by members' slow response in sending in their articles, advertisements, &c.; and even now, on going to press, some who promised to write a few notes have not sent them in." Those of our readers who have had anything to do with such publications as these know that this is only too true. However, the work will be taken in hand much earlier for the next Year-Book, and the hon. secretary promises that it will be an even better work than the present. That this one is good cannot be denied, and it is certainly the best of any issued by the Orpington clubs. Among the excellent reading matter is "A Short History of the Club," by the founder and the first hon. secretary and treasurer, Mr. W. Richardson, who shows how the club was founded and brought to its present high position.

Mr. Edward A. Cass contributes an article on "Breeding Buffs for the Show Pen," and mentions the great difficulty that even old hands experience in securing the ideal birds to mate for the production of first-class specimens. "Preparing Buffs for Exhibition" is ably dealt with by Mr. W. J. Golding, while Mr. David Reid treats of "Buffs in Scotland" and Mrs. George O'Grady of "Buffs in Ireland." Miss N. Edwards has something to say of "Buffs for Women Fanciers," while the novice receives excellent encouragement from Mr. W. Gordon French, and "The Utility Qualities of the Buff" is handled in a masterly manner by Mr. W. H. Atkins. Reports of the Club Show and Hayward's Heath show are given in "Our Judges' Comments," but unfortunately those of other classic events were not sent in. The half-tone illustrations are of the birds which won the cockerel, the pullet, and the hen challenge cups at the Club Show. Altogether, then, the thirteenth Buff Orpington Club Year-Book is a valuable addition to poultry literature and a great advance on former issues. The hon. secretary and treasurer is Mr. W. J. Golding, Westwood Farm, The Weald, Kent.

"Ouida" on Poultry.

All day long the fowls kept it alive with sound and movement; for of all mercurial and fussy things there is nothing on the face of the earth to equal cocks and hens. They have such an utterly exaggerated sense, too, of their own importance; they make such a clacking and clucking over every egg, such a scratching and trumpeting over every morsel of treasure-trove, and such a striding and stamping over every bit of well-worn ground. On the whole, I think poultry have more humanity in them than any other race, footed or feathered; and cocks certainly must have been the first creatures that ever hit on the great art of advertising. Myself, I always fancy that the souls of this feathered tribe pass into the bodies of journalists; but this may be a mere baseless association of kindred ideas in my mind.—"Ouida" in *Puck*.

ANSWERS TO CORRESPONDENTS.

Poultry-Fattening.

I hope to be leaving here in a short time as a qualified poultry-fattener, and am going into business in another district on my own account. The breeds in the district are not what one would like to commence to get a name on, so I propose to keep three or more pens of the best table classes, to supply eggs for setting, and pure cockerels at a reasonable price to surrounding poultry-breeders, and rear chickens for myself in the early part of the year. We have a co-operative egg society in our district, and most of the farmers are members. Egg-production, therefore, is the most important thing at present; but I think if a farmer kept a flock of White Wyandottes for eggs, and crossed these with a good table class, he would get both eggs and table birds. I find it difficult to choose a breed. In a back number of your paper Mr. W. Brown says a chicken can be reared ready for the fattening coop for 9d. What foods did he use? Your advice on the following points would be greatly appreciated:

1. Best pure breed and best cross for table.
2. Best pure breed and cross to combine eggs and table.
3. How a chicken can be reared for 9d., or even 1s.

(J. H. P., Taplow.)

The poultry-fattener in any district where egg-production is the chief object of farmers and others is very severely handicapped, in that his supplies are not of the grade that will produce the best class of market fowls. That explains why several promising ventures have failed. Even in Sussex the problem is to secure enough birds to keep the cages full and to keep up a regular supply to traders or private customers. Something can be done by breeding your own chickens, but experience at home and abroad has shown that to make such a business successful collection must be made from many breeders. If it can be proved to the latter that there is a paying outlet for chickens, they may be induced to take up that branch and to keep the right class of fowl. You could help greatly in that direction by supplying them with suitable birds as breeding stock, and inducing them to hatch much earlier than is the case at present. It would occupy too much space to give the table of foods supplied in the experiment to which you refer, but we are sending you by post a copy of the report in which you will find full particulars. In reply to your questions: 1. As a pure breed you would find the Buff Orpington excellent, and for crosses a Faverolles cock on Buff Orpington hens gives quick-growing, meaty chickens. Another useful cross is between a White Orpington cock and Buff Orpington hens. 2. White Orpington if pure, and for crosses the last cross named in No. 1. 3. This you will find in the report sent you. We shall be glad to give you any further help.

Feeding Water-fowl.

Can you tell me what mixture should be used in feeding water-fowl of various sorts, all kept to-

gether upon a large pond with a grass field to run over?—Novice (Harrow).

A very commonly used mixture for the collections kept in public and private parks consists of one part each of wheat and barley, with a quarter part of buckwheat and the addition of some small round maize and hempseed in winter. Grass and chickweed comprise the most suitable green food.

Short Replies.

C. A. R. (Whitstable).—1894.

F. S. W. (Hadleigh).—We have replied by post.

H. G. T. M. (Darmforth (?)).—Buff Orpingtons.

M. B. (Frome).—(1) Peat moss litter. (2) From 80 to 85.

T. B. (Hexham).—Without fuller details we cannot help you.

H. A. G. (Amersham).—Thank you for your suggestion. It is, however, impossible to do as you wish.

TRADE NOTICES.

A Good Strain of Yokohamas.

Mrs. L. C. Prideaux sends us an interesting communication which she has received from Mr. E. Lloyd, of Ballarat East, Australia, who sends an order and remittance for some more fowls. Mr. Lloyd writes as follows: "I find my Yokohamas lay as well as any Leghorns. The Government of Victoria have a laying competition. I will try and put some in it for next year. The two hens I got from you are still laying ever since they arrived. I have forty chicks out of the last trio."

Miss Edwards's Catalogue.

Miss Edwards, of the Coaley Poultry Farm, Gloucestershire, has issued an extremely interesting catalogue, containing numerous attractive illustrations, and particulars of her birds and fowls. Miss Edwards is so well known in the poultry world, and her stock is of such excellent quality, that we really need say very little concerning it. We advise our readers, however, to send for a catalogue so that they may see for themselves the extent of her operations.

"Thrivex" Chicken Food.

We have received from J. Melhuish, Ltd., of Armada Place, Bristol, a sample of their Thrivex mixture for young chickens, some satisfactory accounts of which we have heard in different parts of the country. This dry feed is claimed by the proprietors to contain nothing but good and sound grain, and provides the chickens with a nutritious diet. On it, they say, the birds thrive amazingly, while they are remarkably free from disease. Full particulars will be sent to any reader of the ILLUSTRATED POULTRY RECORD on application to the manufacturers.

Mr. Tamlin's Exports.

The following is a list of Mr. W. Tamlin's exports for March, 1912: Twenty 30 incubators, also thirty 60 incubators, fifty 100 incubators, also ten 200 incubators, ten each of 60 and 100 chick foster-mothers, to Mr. J. and W. H. Chandler, agents for Victoria, Australia; twenty 60-size incubators, also twenty-five 100 and ten 200-size incubators, ten 200 and ten 60-chick foster-mothers, to Fletcher Bradley, Ottawa, agent for Canada; six 60 incubators and two 60 foster-mothers, to Ed. Baron, agent for Switzerland; six 200 incubators, also ten 60 incubators, to Fernand Colman, agent for Belgium; two 60 and two 100 incubators, two 100 foster-mothers, to Edw. Clarke, agent for Turkey; one 100 incubator and one 100 foster-mother, to C. Solervicens, Spain; one 100 incubator, to Mombasa, Africa, per order of Mrs. Davies-Evans; one 100 incubator,

to Rhodesia, per order of Mr. H. Stockwell; one 100 incubator and one 100 foster-mother, to Mr. L. W. A. Sillevs, Holland; one pen White Wyandotte fowls, one pen Minorcas, to Mr. Samarasinghe, West Coast of Africa; one 60 incubator and one 60 foster-mother, to W. Bramwell, Transvaal, S. Africa, order of W. C. Thomas; one 200 incubator, to Miss A. Beecham, Holstein, Germany.

Messrs. William Cook and Sons' Exportations.

During the past few weeks Messrs. William Cook and Sons have shipped from the "Home of the Orpingtons"—Orpington House, St. Mary Cray, Kent—many birds, including the following: Per ss. Minnehaha to Ohio, two pens of first-class White Orpingtons; per ss. Highland Warrior to Buenos Aires, a pen each of Black Orpingtons, Barred Rocks, Indian Game and Silver-Grey Dorkings; to Rotterdam, a White Leghorn cockerel; per ss. Kasanga to Buenos Aires, fifty White Leghorn pullets and six cockerels; per ss. Baltic to Regina, Canada, a first-class Buff Orpington cockerel; to Rio de Janeiro, a pen of White Orpingtons; to Novgorod, Russia, two Jubilee Orpington cockerels, two Minorca cockerels, and one each Barred Rock, Buff Leghorn, Golden Wyandotte, Salmon Favorelle, Silver-Pencilled and Buff-faced Wyandottes; per ss. Highland Laddie, seven pens of partridges; per R.M.S. Kinfauns Castle, a pen of Black Orpingtons to Durban; per ss. Aragon to Bahia, a pen of Buff Orpingtons; per Messrs. McGrath for South America, three pens of Black Orpingtons, two of Barred Rocks, and one each of Rhode Island Reds and Buff Orpingtons; per Continental Express to Russia, a pen each of Barred Rocks, Buff Orpingtons, and Black Minorcas; per Wells Fargo to Canada, a pen each of Buff Orpington Ducks, Houdans, and White Orpingtons; per R.M.S. Briton to Algoa Bay, two pens each of Barred Rocks and Buff Orpington ducks; per American Express Co., twenty dozen Blue, White, and Buff Orpington eggs for visitors to their farm who reside in U.S.A. in addition to over fifty dozen eggs of all varieties of Orpingtons sent to Germany, France, and Russia since April 1 alone.

Illinois Experiment Station.

Twenty acres of land are now devoted to poultry work, and a new poultry-house has been erected, 120ft. by 20ft. Mr. D. Barton has been appointed associate professor of poultry husbandry in charge of the section.

Death of Mr. D. A. Nichols.

American exchanges report the death of this gentleman, a past-president and member of the Executive Board of the American Poultry Association, and a well-known breeder and judge.

Paddy versus White Rice for Chickens.

What is called "paddy" rice, that is with the husk on, is generally given to chickens, but there are poultry-keepers who use the cleaned rice. The observations of Mons. L. Breaudal, as recorded in a French chemical journal, show that the outer skin is necessary in feeding this product. If chicks are fed on the dressed rice exclusively, whether cooked or not, during the first eight days they eat large quantities. At that stage the appetite fails, diarrhoea with a decline in body temperature ensues, there is loss of weight, and during the second and third week death results. Experiments made at the same time when "paddy" rice was fed showed no such loss, and the gain was steady. We have yet to learn the real value of bran and husk.